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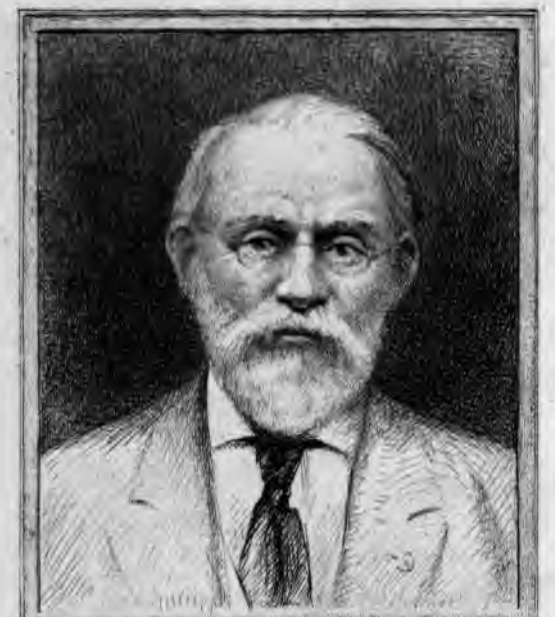

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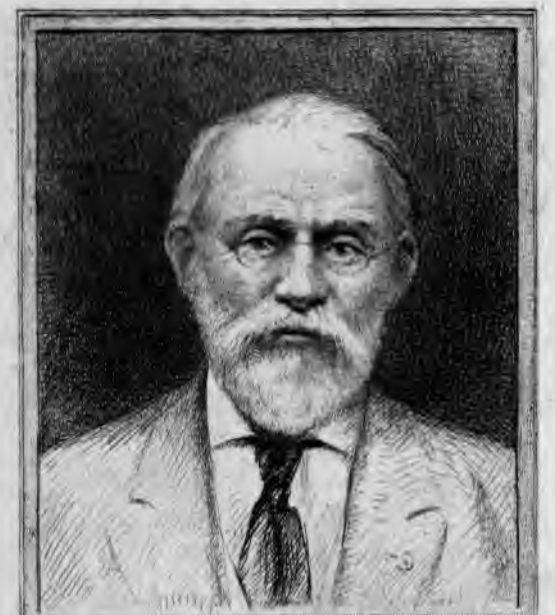

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THE

TRANSACTIONS

OF THE

BOMBAY GEOGRAPHICAL SOCIETY.

FROM JANUARY 1868 TO DECEMBER 1873,

(ON ITS AMALGAMATION WITH THE B. B. R. ASIATIC SOCIETY).

EDITED BY THE SECRETARY.

VOLUME XIX.

Bombay:
PRINTED AT THE
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PROCEEDINGS

OF THE

BOMBAY GEOGRAPHICAL SOCIETY.

SESSION 1867-68.

THIRD MEETING.—*January 16th*, 1868.

THE ordinary Monthly Meeting of the Bombay Geographical Society was held on Thursday the 16th January 1868, at 5 o'clock P.M.

Present.—Commander G. T. Robinson, *Vice-President*, in the Chair; the Hon'ble George Foggo, *Vice-President;* Sir Jamsetji Jijibhai, Bart., F.R.G.S.; J. Burgess, Esq., F.R.G.S., M.R.A.S.; Khurshedji Fardunji Parak, Esq.; Homji Khurshedji Dadi, Esq.; J. Firth, Esq., *Members;* and Lieut. Henry Morland, F.R.A.S., F.R.G S., *Honorary Secretary.*

The Minutes of the last Meeting were read and confirmed.

Elections.—J. Macdonald, Esq., and F. W. Pickering, Esq., were, after Ballot, declared Members of the Society.

Several donations to the Library were announced, for which the best thanks of the Society were voted to the donors.

Among the several letters read were the following:—

1. From Captain W. A. Baker, R. E., Acting Under Secretary to Government, Public Works Department, conveying the resolution of Government directing the Chief Engineer, Presidency Division, to supply the maps called for by the Society.

2. From W. E. Frere, Esq., ex-President of the Society, acknowledging £100 remitted to him in June last for commissioning an artist with the execution of his Portrait, and expressing his readiness to render every assistance in his power to carry out the Society's wishes with regard to Mr. Premchand Raichand's grant.

3. From H. E. Jacomb, Esq., C. S., Under Secretary to Government, General Department, forwarding copy of an extract from the proceedings of Government, on the subject of the Geological Action on the South Coast of Káthiáwád, and requesting to be informed if data were available with the Society for the formation of tables for the Ran similar to those for Bombay given in para. 11 of Colonel Walker's letter, and also what period of the year they would pronounce unsuited for the prosecution of tidal observations on account of the prevalence of continuous strong winds from one quarter.

Captain Morland then reported for the information of the Society that on the 24th of December last, he addressed a letter to the Chief Secretary to Government requesting him to move His Excellency the Right Hon'ble the Governor in Council to assign to the Society the Room below the Library of the Asiatic Society, vacated by Colonel Worgan, Inspector General of Ordnance and Magazines, on account of the removal of his office to Poona. He added that the Room the Society now occupied was sufficient for their requirements; but still from its situation, it was not a desirable Room for a public Society—he trusted that Government would be pleased to respond favourably to the Society's appeal, as the Room he had applied for was in every respect more eligible.

The Secretary then submitted to the Society the following plan of the proposed Anglo-Vernacular Index of Indian Geographical names prepared by Mr. Burgess, and approved by the Sub-Committee appointed for the purpose:—

Plan of a proposed Index or List of the Geographical names in India, in Vernacular and English Spellings, with Memoranda Geographical, Etymological, Antiquarian, and Statistical.

The Committee of the Geographical Society of Bombay appointed to prepare a Vernacular and English Index or List of the principal places, rivers, mountains, &c. in India, have agreed on the following statement of the outline of a general plan to guide them in the formation of the proposed Index, and to enumerate the particulars it might properly include.

2. The object of the list is primarily *geographical* and *etymological*, but the Committee hope information may be placed at their disposal to enable them to make it also historical and statistical. They do not contemplate the compilation of a gazetteer, but such an index will

form an essential preliminary and basis for a full gazetteer of India,—a work of which the want is becoming greatly felt.

3. The Committee therefore consider that a full Index of the kind ought to embrace the following:—

1. Names of all towns, villages of any size or note, railway stations, &c., with the taluka and district or state in which each is situated and its longitude and latitude.

To this it seems desirable to add, where known, the population; name of the river or stream on which each is situated; altitude above the sea-level; the dates and names of founders; the etymology of the name; the Sanskrit or ancient name; and notes of connected events, peculiar products or manufactures; places of note, temples, commemorative pillars, &c. in their vicinity, with references to fuller descriptions already published.

2. Names of the talukas or divisions in each district, with the area, chief town, and population.
3. Shrines and places of pilgrimage, with notes of the objects of adoration or pilgrimage, dates of fairs, &c., and precise locality.
4. Rivers, their rise, course, and confluence or debouchure; lakes, with their size or area and products; hot springs, with their temperature.
5. Mountain ranges with average heights; peaks with their greatest altitude; hill forts, with notes of events connected with them and their present condition.
6. Valleys, plateaux, &c. having particular designations, with notes on their peculiarities.
7. Tribes and peculiar sects, with notes of their habitats, castes, race, peculiar deities, occupations, &c.

The notes alluded to under the above heads are not intended to be lengthy, and in few cases need extend to half a dozen lines, but generally may be restricted to one or two: whilst all detailed information collected might be preserved by the Geographical Society for reference.

4. If this plan can be well filled up, the proposed list will include as many as possible, if not all, of the names on the maps of Rennell, Arrowsmith, Allen, Walker, and Keith Johnston, and in the road-books, with many others in addition. It would thus be of considerable extent, and require a large amount of patient labour, besides the col-

lection of much information that has never yet been brought together from the many districts of so vast a country.

5. The forms in which the Committee propose to compile the names are twofold. 1*st*, Every name must be given in the characters of the vernacular or vernaculars of the district in which it occurs, and in the language to which the name belongs. Thus purely Muhammadan names must be given in Urdu, and in the characters of the Hindu dialect of the place; and Hindu names in the form or forms used by educated Hindus of the vicinity, whether Hindi, Bengali, Panjabi, Kashmiri, Sindhi, Kachhi, Gujarati, Marathi, Uriya, Telugu, Tamil, Malayalim, Singalese, or Burmese; but for convenience in printing, it may be found best to use the Devnagari alphabet for all the Sanskritic dialects at least. To guide in deciphering the various characters, and prevent mistakes in printing, each name should be followed by its transliteration into Roman characters according to a uniform alphabet. This will be of special value in all manuscript lists sent to the Committee. And, as the alphabet of Sir Wm. Jones as now written by the Royal Asiatic and other Societies and by most Orientalists is familiar to many, the Committee would employ it for this purpose, and prepare alphabets of the different Indian languages for the use of those who may assist them. The Committee would gladly have availed themselves of the spellings in published vernacular maps and books, but have found, in the best of these, instances of transliteration from common English spellings, and therefore cannot depend upon them as trustworthy, even for those districts for which they are able to obtain such aid; and they recommend that the vernacular orthography of the names be collected afresh, together with other information. 2*nd*, Besides the vernacular, the English spellings in common use and on the Trigonometrical Survey maps will be given; and both the English and Vernacular forms will be so arranged that, either being known, the name will be at once found in its alphabetical place in the Index.

6. To these the Committee hope to be able to add any peculiar forms of Indian names found in the best-known historical and descriptive works on India, such as the writings of Orme, Dow, Elphinstone, Grant Duff, Mill, Wilson, Thornton, Montgomery Martin, Rennell, Hamilton, &c., also the Greek and Sanskrit ancient names so far as they have been identified by Lessen, De Saint-Martin, Cunningham, &c.

7. As to the modes of spelling, it is well known that the Indian Universities and Oriental Scholars are in favour of writing names as

transliterated from the vernacular orthography, whilst popular feeling is probably averse to any change in the prevalent variety. This List or Index interferes with neither further than to bring them together. By giving the names in Native characters their etymologies as well as pronunciation will be much better preserved than by any mode of transliteration alone on any system whatever; and no name will be entered whose vernacular spelling has not been obtained. The transliterated spellings will serve as a check on typographical errors; and the ordinary spellings will make the list generally useful to all Europeans, especially to such as are not thoroughly acquainted with the geography of the country, and will adapt it as an index to all maps of India.

8. Considering the nature and extent of the work, the Committee,—whilst they would gladly prepare forms of the returns required with instructions respecting the particulars to be entered, &c., and systematic alphabets for transliterating the various languages so as to prevent mistakes and confusion, and whilst ready to do their best in compiling and editing the information placed at their disposal—feel that they must be mainly dependent upon fresh information from each locality. And, believing as they do, that with adequate assistance such a List or Index would be of permanent value to all connected with this country, they recommend the Geographical Society to bring the matter before the Government of Bombay, with the request that the Committee and Society be afforded that assistance in procuring the desiderated information, which Government alone can afford by obtaining the services of its officers in the Revenue and Educational departments and others, in collecting the vernacular names and other required particulars from the various districts of the Presidency; and that the Government of Bombay graciously use its influence in obtaining for the Society similar assistance from the other Governments of India.

JAMES BURGESS.
BHAU DAJI.
VISHVANATH NARAYAN MANDLIK.
J. P. HUGHLINGS.
HENRY MORLAND.
R. S. SINCLAIR.
J. SCORGIE.

The above plan having been approved of by the Society, it was unanimously resolved to recommend it to the favourable consideration of Government, with a request that the Society might be afforded the assistance it required in procuring the necessary information, and otherwise in forwarding the labours of the Committee to complete the Index for the Bombay Presidency; and that Government be requested to commend it to the favourable notice of the Governments of other Presidencies.

There being no further business the meeting adjourned to next month.

SESSION 1867-68.

FOURTH MEETING.—23*rd April*, 1868.

The ordinary Monthly Meeting of the Society was held on Thursday 23rd April 1868, at 5 P.M.

Present.—Commander G. T. Robinson, *Vice-President*, in the chair; J. Burgess, Esq., F.R.G.S., M.R.A.S.; Manekji Khurshedji, Esq., F.R.S.N.A., F.R.G.S.; K. R. Kama, Esq.; J. E. C. Pryce, Esq., F.R.G.S.; Lieut W. L. Searle, F.R.A.S.; J. Mackinlay, Esq., F.R.G.S., M.R.A.S.; Atmaram Pandurang, Esq., G.G.M.C.; D. E. Gostling, Esq., *Members;* and Lieut. Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary.*

The Minutes of the last Meeting were read and confirmed.

Election.—James Sewell White, Esq., Barrister-at-Law, having requested admittance, was elected a Member under Rule XXII. of the Society.

Several donations to the Library were announced, for which the best thanks of the Society were voted to the donors. Among letters read were the following:—

1. From Major General C. W. Tremenheere, Chief Engineer, Presidency, forwarding 25 Maps of the Collectorates of the Bombay Presidency in conformity with the Government Resolution No. 13E-54 of 9th January last.

2. From the Secretary to Government, General Department, forwarding the Government Resolution No. 114 of the 16th January last on the subject of the Geological action on the south coast of Káthiáwád and the Ran of Kachh.

3. From the Acting Chief Secretary to Government, General Department, forwarding printed copy of Mr. Sowerby's original and supplementary Memoranda on the Geological action on the south coast of Káthiáwád, &c.

The following correspondence received from the Bombay Government on the subject of the proposed Scheme for the Compilation of an Anglo-Vernacular Index of Indian Geographical names was also submitted :—

No. 655.—General Department.

Bombay Castle, 8th April 1868.

Letter from the Honorary Secretary to the Bombay Geographical Society No. 6, dated 10th February 1868—Forwarding 30 copies of a plan for the preparation of a Vernacular and English List or Index of Indian Geographical names, submitted by the Committee appointed to prepare it, and approved of by the Society; and requesting that the Society may be afforded the assistance it requires in procuring the necessary information, and otherwise in forwarding the labours of the Committee to complete the Index for the Bombay Presidency; and that the plan of the Society may be commended to the notice of the other Governments of India.

Memorandum from the Director of Public Instruction No. 3342, dated 20th Feb. 1868.
Memorandum from the Acting Survey and Settlement Commissioner S. D. No. 168, dated 20th February 1868.
Memorandum from the Officiating Revenue Commissioner S. D. No. 539, dated 24th February 1868.
Memorandum from the Revenue Commissioner N. D. No. 830, dated 3rd March 1868.
Memorandum from the Survey and Settlement Commissioner N. D. No. 241, dated 14th March 1868.

Replying to Government memorandum No. 320, dated 15th February 1868, calling for opinion as to the most reliable agency for compiling accurate information of the nature required to serve as the basis of a Gazetteer.

RESOLUTION.—The Bombay Geographical Society should be informed that the compilation of a Gazetteer for the Bombay Presidency is already under the consideration of Government; and a copy of the letter despatched to the Government of India on the 29th January, with the Government of India's Resolution thereon of the 4th March, should be forwarded to the Society for their information.

2. On the appointment of the Committee by Government to carry out the undertaking, the proposed scheme of the Geographical Society will be submitted for its consideration.

3. Copies of the letter from the Honorary Secretary of the Society, with its accompaniment, should be forwarded to the other Governments of India for favorable consideration.

F. R. S. WYLLIE,
Officiating Secretary to Government.

To The HONORARY SECRETARY to the BOMBAY GEOGRAPHICAL SOCIETY, (with copies of the papers referred to in paragraph 1, together with copies of Government Resolutions Nos. 656 and 657, dated 8th April 1868),

The DIRECTOR of PUBLIC INSTRUCTION,
The REVENUE COMMISSIONER N. D.,
The REVENUE COMMISSIONER S. D.
} With copies of the letter from the Honorary Secretary to the Society, and accompaniment, and of the memoranda from two Survey and Settlement Commissioners.

No. 209 OF 1868.—GENERAL DEPARTMENT.

Bombay Castle, 29th January 1868.

From E. W. RAVENSCROFT, ESQ.,
Acting Chief Secretary to the Government of Bombay,

To SIR W. MUIR, K.C.S.I.,
Secretary to the Government of India, Foreign Department,
Calcutta.

SIR,—With reference to Mr. Under Secretary Wyllie's Circular letter No. 1758, dated 19th October last, requesting that steps may be taken for the compilation of a Gazetteer for this Presidency similar to that published in the Central Provinces, I am directed to submit, for the information of the Government of India, the following remarks by His Excellency the Governor in Council.

2. The work to be done for the Bombay Presidency will be of multifarious character. For instance, the article on the commerce of

Bombay will require special qualifications in the writer. Again a different sort of speciality would be required for writing accounts of the sacred cities of Nasik, Pálitáná, &c.; the caves of Ajanta, Elora, &c.; the histories of Sindh, Gujarat, Ahmadnagar, &c.; the Portuguese ruins of Basain, and their connection with the history of the Presidency; and accounts of the Parsís, Khojas, and other castes and tribes.

3. In short, what we should have before us would be an undertaking of much greater scope and difficulty than the composition of a Gazetteer for the Central Provinces. Much thought must be taken before the general plan can be laid down, and afterwards all sorts of questions as to arrangement and mode of treating particular parts are sure to arise.

4. The local Revenue Officers, I am to add, cannot, as a general rule, find time to devote to work of this description without neglecting their ordinary duties; but they could, no doubt, correct and amplify so as to make it of very great use, a compilation of information such as that in the Gazetteer which might be drawn up by a Special Officer from the published and unpublished records of Government.

5. His Excellency the Governor in Council, therefore, thinks that the general supervision and direction of the work should be placed in the hands of a Committee, consisting of the Revenue Commissioners and the Director of Public Instruction, with whom should be associated the Commissioner of Customs, and an Editor should be appointed (with a small copying establishment) to act under the directions of the Committee. The Editor should give his entire time to the work, and be expected to finish it in about a year. It should be his duty to collect and arrange all recorded information of all towns, places, &c., within each Collectorate, in alphabetical order, which might be printed on half margin, each part being sent to the local Officers for verification, additions and alterations, and when these were returned and corrected by the Editor, they might, with advantage, be laid before the Committee, who might also be of use to the Editor in fixing the arrangement and plan of the work, but it should be clearly understood that all the credit and responsibility of the Gazetteer should belong to the Editor.

6. The Officer appointed to serve as Editor would naturally be entitled to some remuneration for his onerous task, and in addition to a small establishment of copyists he would have to meet other

expenses which would arise, such as a fair remuneration for articles from qualified persons, the printing of the work, with small accompanying maps, &c., &c. On the whole, it is expected that a sum not exceeding Rupees 12,000 will have to be sanctioned for the total expenses of the Gazetteer, including payment to the Editor.

7. In submitting the above remarks, I am directed to observe that it is out of the question for the work to be done in a satisfactory manner, unless a suitable grant as that proposed for the purpose is made.

I have the honor to be, Sir,
Your most obedient Servant,
(Signed) E. W. RAVENSCROFT,
Acting Chief Secretary to Government.

No. 1283.

GOVERNMENT OF INDIA, FINANCIAL DEPARTMENT,
Fort William, The 4th March 1868.

Read an Endorsement of the Foreign Department No. 350, dated the 24th ultimo, on an application from the Government of Bombay for the grant of a sum not exceeding Rs 12,000 for the expenses of the compilation of a Gazetteer for that Presidency.

SANCTIONED.

Ordered, that a copy of the above be sent to the Foreign Department, and the Accountant General, Bombay.

(Signed) E. H. LUSHINGTON,
Secretary to the Government of India.

No. 469.

Copy forwarded to the Government of Bombay, with reference to their Acting Chief Secretary's letter No. 209, dated the 29th January last.

(Signed) J. T. WHEELER,
Assistant Secretary to the Government of India.

Fort William, Foreign Department, General, the 12th March 1868.

At the conclusion of the above correspond[illegible] ain Morland observed that Government appeared to [illegible] object contemplated in the Plan of the I[illegible]

and that he considered it desirable that they should be addressed again on the subject, pointing out the precise character of the proposed Index, and the nature of the co-operation called for.

Mr. Burgess said he greatly regretted the absence of Dr. Bhau Daji and Mr. Vishvanath Narayan Mandlik to whom the proposed Plan of the Index was considerably indebted for the form it had finally assumed, and who could have done much more justice to the views of the committee than he could hope to do. He remarked that he was at a loss to understand the precise meaning of the resolution of Government when taken in connection with the other correspondence which Government had thought it necessary to forward to the Society along with it. From the first part of the resolution it appeared to him as if Government thought the proposed Index would be unnecessary, for the Bombay Presidency at least, being superseded by the Government Gazetteer mentioned in the correspondence. This Gazetteer Government proposed to have compiled in twelve months on the plan of the Gazetteer of the Central Provinces. Now the Committee of this Society had expressly stated in their proposed scheme that it was not their purpose to compile a Gazetteer, or to enter into the statistics of the commerce of Bombay, or the history of Pálitáná, or a description of the temples of Elora. Everything beyond the mere name and position of each place it was intended to include in two or three lines, stating the population, name of the founder, date of any remarkable siege, &c. Then from the period allowed for compiling and the plan proposed, he could hardly think that the Government Gazetteer was likely to include more than from 500 to 700 names of places in the Presidency, whilst from a careful computation he found that a full index for the various maps mentioned in the plan of the Society's committee would include from 26,000 to 30,000 names: this was of course for all India with Ceylon and Burmah; but on a very moderate estimate Bombay and Sindh might be reckoned to contain a tenth of these, say 2,800 names, of which not more than one-fourth could be expected to appear in the Government Gazetteer; and if the latitude and longitude of each were given, probably in very few cases indeed would the name be given in the Vernacular, from which alone its *etymology* could be correctly inferred. In this way the Index was quite independent of the Gazetteer, and whenever a really *complete* Gazetteer could be undertaken—which it is almost impossible to attempt at present—such an

Index would be an almost indispensable preliminary. Moreover, h thought Government had probably overestimated the assistance th Society had asked. He had been informed that Government possesse a mass of returns called for by Mr. Erskine, that would, if placed a the disposal of the Society, yield a large amount of the information re quired. Then he believed the trouble to the higher Revenue Officer to complete the information would be very trifling, since the Mam latdars were the best qualified persons to supply all such information and the forms could be prepared in Marathi and Gujarati to b filled up. Their superiors would only have to forward the forms t them.

From the second part of the Government Resolution, he said, h thought he was confirmed in his supposition that the proposal of th Society had been partially at least confounded with the compilin of a Gazetteer. He thought, moreover, that taken altogether, tl Resolution did not meet the request of the Society, and if tl other Members agreed with him in this, he would suggest it f consideration whether Government should not be written to agai and attention called to the character of the information wante and the facilities with which Government could supply it, poin ing out also the distinctive character of the proposed Index compared with any Gazetteer that it is at all possible to compile in limited time at present. He was much gratified to hear that th Government of Bombay had recommended the proposal of the Societ to the other Governments.

At the conclusion of Mr. Burgess' remarks, a long discussio followed, in which several of the members present took a part. Th chairman having dwelt at some length on the merits of the argument brought forward, it was moved by Captain Morland, and seconde by Mr. Burgess, and unanimously carried,—

"That the attention of the Bombay Government be again invited t the distinctive character of the proposed Index as compared with th Gazetteer, the compilation of which is now under their consideratior and also to the nature of the co-operation solicited by the Society."

The best thanks of the Society having been voted to His Excellenc the Right Honorable the Governor in Council for the most acceptabl present of the maps, and to the other contributors to the Library, th Meeting adjourned to the next month.

SESSION 1867-68.

ANNUAL MEETING.—*May 28th*, 1868.

THE Annual General Meeting of the Bombay Geographical Society was held on Thursday, the 28th May 1868, at 5 P. M.

Present.—Commander G. T. Robinson, *Vice-President*, in the Chair; J. E. C. Pryce, Esq., F.R.G.S.; G. C. M. Birdwood, Esq., M.D.; Atmarám Pandurang, Esq., G.G.M.C.; F. J. Candy, Esq., M.A.; J. Firth, Esq.; K. R. Kama, Esq.; Bhagwandas Purshotamdas, Esq.; Dhirajrám Dalpatrám, Esq., G.G.M.C.; J. Mackinlay, Esq., F.R.G.S., M.R.A.S., *Members*; and Lieut. Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary*.

Visitors.—Lieut. J. Brebner, and William Sowerby, Esq., C.E., F.G.S.

The Minutes of the last Meeting were read and confirmed.

Elections.—Shántárám Náráyan, Esq., and Javherílál Umiashankar Yajnik, Esq.

Member proposed.—William Sowerby, Esq., C.E., F.G.S.

Several donations to the Library were announced, for which the best thanks of the Society were voted to the donors.

Among the communications read were the following:—

1. Government Resolution No. 871 of the 9th May last, General Department, communicating a reply from the Secretary to the Government of the Panjáb that a Gazetteer for the Panjáb is under preparation, which, when completed, will supply much, if not all, the information required by the Society.

2. From the Secretary to Government, Political Department, forwarding the following communication:—

From JOHN KIRK, M.D., Her Majesty's Vice-Consul, Zanzibar.

To H. A. CHURCHILL, Esq., C.B., Her Majesty's Political Agent and Consul at Zanzibar.

SIR,—The natives attribute the present disorders at Quiloa to the "Maviti," a people well known on the N'yassa Lake, and of whom many rumours reach the Coast by the trading Arabs. The true Maviti of the hills west of N'yassa came originally from Zulu land, where their Chief rules as feudal lord from Delagoa Bay to Senna on the Zambezi, exacting tribute from the Crown estates of Portugal, on

the south bank of that river. The founder of this branch of the Kaffir family was Ziti, brother to Zulu. On the death of successive Chiefs it has been the custom in Zulu land, as among the Arabs of Oman, for the members of the Chief's family to strive for supreme power, the unsuccessful claimants being either killed or quitting the country with their followers, and amalgamating with the outlying people, or if powerful enough taking the country that best suits them. In this way Mosilikatze founded the Matibele, a people whose name is still the terror of Southern Africa.

2. In like manner about the time when Manakhouse, the late Chief of the Maziti (people of Ziti) began to rule the country South of the Zambezi, a small band crossed that river, near Senna, and taking the tribal name of Maziti fought their way along the mountain ranges which overhang the eastern side of the Shire and Lake N'yassa. The lands of Bororo of the Manganja and Waiao were desolated in their line of march. Men and women were remorselessly killed, only those between the ages of five and ten being spared; these the Maziti took, to bring up, not as slaves, but as free men of their tribe. In the Waiao country they found abundance of cattle, which they drove off. At last, having gone round the North end of the N'yassa Lake, they settled on a high plateau 4,000 feet above the sea, in a healthy land, well suited for cattle, in which their only riches consist.

3. In 1860 Dr. Livingstone and myself met the outlying guards of these people, but were unable to gain access to their Chief. We were fortunate then in having one Matibele who had been taken in war and others who spoke fluently the Zulu language among our escort. In dress, as in language, those we saw corresponded exactly with the natives of Natal. On the N'yassa they are known as Mafiti or Maviti, a native corruption of their proper name, meaning as modified in the N'yassa tongue, "Sorcerers or Witches," so in the island of Zanzibar it gives to the native mind the idea of "Warriors." Although these Maviti have the language, mode of warfare and habits of the Southern Zulus, the individuals we saw certainly had no Zulu blood, but their filed teeth proclaimed them to be children, now grown up, of the tribes through which the conquerors had passed.

4. These people are in the habit of sending out marauding parties to keep their borders a desert, and thus protect their cattle posts from sudden attack, and to make war on all who possess flocks and herds.

The Maravi, Manganja, and A-Bisa have thus in succession suffered, and I have myself been a witness to the utter destruction which follows in their track. This system of plunder they have lately carried out along the Koouma, and the Arabs believe that the marauders who are causing so much bloodshed at the present time in the neighbourhood of Quiloa, are these genuine Maviti of the Lake. From the crude reports which reach us it is impossible to form a definite opinion as to whether this is or is not the case, but for my own part I am inclined to think that these people are a mixed band of Waiao and other tribes who from contact with the Maviti of the interior have adopted in part their mode of warfare and dress.

I have, &c.,

(Signed) JOHN KIRK.

Dated March 6th, 1868.

The business of the meeting having been terminated that of the Annual Meeting was taken up, and the following gentlemen were declared, from the Voting lists scrutinized by the committee, to be the office-bearers for the ensuing session of 1868-69:—

Vice-Presidents.—1. The Hon'ble Mr. Justice Newton, C.S. 2. Commander G. T. Robinson. 3. The Hon'ble George Foggo.

Resident Members of the Committee.—1. James Taylor, Esq. 2. Sir Jamsetjee Jejeebhoy, Bart., F.R.G.S. 3. Rao Saheb Vishvanath N. Mandlik. 4. J. Connon, Esq., M.A. 5. J. Burgess, Esq., F.R.G.S., M.R.A.S. 6. Bhau Daji, Esq., G.G.M.C., Hon. M.R.A.S. 7. G. C. M. Birdwood, Esq., M.D. 8. Captain G. F. Henry. 9. The Hon'ble L. H. Bayley. 10. The Hon'ble Mangaldas Nathubhai. 11. Cowasjee Jehangir Readymoney, Esq. 12. Venayekrao J. Sankarset, Esq.

Non-Resident Members.—1. Sir Alex. Grant, Bart., LL.D. 2. Col. H. J. Barr. 3. Dadabhai Naoroji, Esq. 4. H. E. General Sir W. R. Mansfield, K.C.B., G.C.S.I. 5. General G. LeGrand Jacob, C.B. 6. Colonel Sir A. B. Kemball, C.B., K.C.S.I., F.R.G.S. 7. T. C. Hope, Esq., C.S. 8. H. E. Rear-Admiral George St. Vincent King, C.B., R.N.

Auditors.—Major J. T. Annesley, and James Burgess, Esq., F.R.G.S., M.R.A.S., were re-elected Joint Auditors of the Society's Cash accounts for the past year.

Captain Morland then submitted the following brief summary of the proceedings of the past session :—

ANNUAL REPORT.

During the year under review the Society met four times, and the following were the papers laid before them :—

1. Memorandum on the Geological action on the South Coast of Káṭhiáwád, and in the Raṇ of Kachh, by William Sowerby, Esq., C.E.,F.G.S.
2. Report of a Journey made by Captain E. C. Ross, Assistant Political Agent, Guadar, along that portion of the Mekran Coast, which lies between Cape Jask and Guadar.
3. Supplementary Memorandum on the Geological action on the South Coast of Káṭhiáwád, and in the Raṇ of Kachh; also on the adjacent Coast line, as far as Karáchí, by William Sowerby, Esq., C.E., F.G.S.

Among the three papers noticed above, two were contributed by a gentleman not in any way connected with the Society, but who yet takes a warm interest in its affairs. It is indeed a matter of regret to add here that notwithstanding the appeal made last year, not a single member has come forward during the last Session to favor the Society with any *original* communication. It is, however, hoped that the coming year will be more fruitful of papers than the last.

The total number of Members on the roll of the Society at the last Annual Meeting was 151, since then six gentlemen had been admitted to Membership of the Society, making a total of 157 Members. Against this, however, the Society have lost 16 Members, of whom there have been removed—

By death 5.—1. The Revd. W. K. Fletcher, M. A. 2. M. H. Scott, Esq. 3. C. Leggett, Esq. 4. Kaliandas Mohandas, Esq. 5. Edward Chapple, Esq.

By retirement from India 5.—1. John Ritchie, Esq. 2. Richard Willis, Esq. 3. Deputy Inspector General of Hospitals H. D. Glasse. 4. Surgeon Major W. Campbell, M.D. 5. C. Forjett, Esq.

By resignation of membership 6.—1. Mírza Ali Mahomed Khaṇ, Esq. 2. Narayan Daji, Esq., G.G.M.C. 3. Kawasji Manakji, Esq. 4. Homji Khursetji Dady, Esq. 5. F. King, Esq. 6. Captain Van-Heythusen.

In all 16 Members, leaving 141 Members at this date.

An appeal was made to some influential and leading gentlemen to extend their patronage to the Society by Membership. This was, however, only partially successful. One cause which detracts from the success of the Society is doubtless the very undesirable situation of the room it at present occupies. Government have been applied to for one of the rooms below the Library of the Asiatic Society vacated by Colonel Worgan, Deputy Inspector General of Ordnance and Magazines, but no reply has yet been received to the application.

The Rev. Mr. Fletcher joined the Society in the year 1859. He went home last year to recruit his failing health, and was suddenly snatched away from the sphere of his usefulness. On receipt of the news of this lamentable occurrence, the Society, in appreciation of his valuable services rendered since his connection with them, recorded the following resolution:—

"That this Society place on record the expression of the deep sorrow with which they have heard of the death of the Rev. W. K. Fletcher, M.A., for nine years a respected member of the Society, and latterly one of their Vice-Presidents, and their testimony to his amiable disposition, high character, and the warm interest he has always taken in the affairs of the Society."

Copies of the General Index to the Contents of the first seventeen volumes of the Society's Transactions, combined with catalogues of the Books, Maps, Charts, &c., were placed before the Society in September last. It is needless to remind them that this work was superintended by Mr. Kennelly on account of the benefaction of Bhagwandas Parshotamdas, Esq., who had placed at their disposal the sum of Rs. 3,500 for the purpose. £231-5-3 or Rs. 2406-11-6 have been spent on account of this publication, and the balance of Rs. 1,093-4-6 available from this grant was, by their permission, appropriated for general purposes.

The collection of books ordered on account of the Khursetji Fardunji Parak grant has come to hand. Rs. 1,500 were presented by the donor, out of which £132-4-9, or Rs. 1,379-8-0, were required for the purchase of the books. The surplus—Rs. 120-8-0—has been laid out in the purchase of a Book Case for the accommodation of this valuable collection.

Rs. 1,000 out of the Premchand Raichand grant of Rs. 5,000 made for the purchase of Maps, Charts, &c., were by a resolution of the Society retained for general purposes. Rs. 538-10-11 have been disbursed in purchasing Maps, &c. There is now, therefore, a balance of Rs. 3,461-5-1 available from this grant, which will be applied towards making other accessions to the Library according to the requirements of the Society.

Mr. Sorabji Pestanji Framji had granted the sum of Rs. 1,000 for reprint of Volume 6 of the Society's Transactions. The total amount required, however, on account of this publication was £151-18-2, or Rs. 1,594-5-5. The excess of Rs. 594-5-2 has therefore been borne by the Society out of their funds.

Of the Frere Portrait Fund, £100 or Rs. 1054-15-1 have been remitted to W. E. Frere, Esq., being a first instalment on account of the execution of his Portrait. There is a balance of Rs. 610-0-11 with the Society on account of this Fund. The disposal of the remittance, the selection of an artist, the size of the Portrait, &c. have been left entirely to Mr. Frere's discretion, and it is to be hoped that the Portrait, when received, would realize the expectations of the subscribers.

The sum of £26-10-10 or Rs. 280 was remitted to the Royal Geographical Society of London in September last, being the amount collected up to that date for the Speke Memorial. There is balance with the Society of Rs. 10 on account of this Fund, which, together with the subscriptions still under recovery, will be remitted to England in due course.

The most important feature in the proceedings of the last Session is a scheme at present under the consideration of the Society for the compilation of an Anglo-Vernacular Index of Indian Geographical names. Mr. Burgess, who has all along evinced the greatest interest in our affairs, first called the Society's attention to this important matter, and is therefore entitled to their best acknowledgments for originating the idea. An outline of a general plan having been agreed upon by the Sub-Committee appointed for its preparation, it was approved of by the Society, who unanimously resolved to recommend it to the favourable consideration of the Government of Bombay. As this scheme is yet in an infant state, and its success somewhat doubtful, it is premature to expatiate on the subject. In the event of the undertaking being carried out, the proposed scheme will supply a long felt want, and lend valuable aid to the cause of science.

The eighteenth volume, comprising the Society's Transactions for the years 1865-66-67, is this day submitted. I have to represent to the Society the valuable assistance which I have received from my clerk, Mr. Balvant Krishnarao Palekar, in editing this volume. He has all along shown the greatest intelligence, assiduity, and zeal in the discharge of his duties.

At the conclusion of the report, the annual statement of Receipts and Disbursements on account of the Society from 1st May 1867 to 30th April 1868, submitted to the Society, showed a balance of Rs. 7,021-14-7 to its credit. This sum comprised the cash balances of three other funds in trust with the Society.

The report submitted by the Secretary having been adopted, Dr. Birdwood observed, that the chief cause of the Society's want of success was the obscure situation of the room in which they met. It was the dingiest, dustiest, closest, and meanest room in the Town Hall. He remarked that he had applied to Government for the rooms on the groundfloor of the Town Hall, below the Library of the Asiatic Society being made over to the Society. Should this application be complied with, he would be very happy to make over two of the rooms to the Geographical and Medical and Physical Societies, so that all the learned Societies of Bombay might be brought together in the northern wing of the Town Hall. He feared, however, that some Military Departments wanted the rooms applied for by him; and in anticipation of their being quartered in them would move,—"That the Geographical Society having heard that the Rooms under the Library of the Asiatic Society applied for by them have been made over to the Military Department, would, with reference to previous correspondence on the subject (No. 96 dated the 24th December 1867) respectfully urge on Government their prior and weightier claim to the same."

This resolution was seconded by Captain Morland, and unanimously carried.

Mr. Firth remarked, that seeing Mr. Sowerby present, to whom the Society was indebted for the original article No. VII. which appears at page 97 et seq. of the Society's recently issued volume, he would take this opportunity of mentioning that Mr. Sowerby had aided the Society with a very interesting contribution on a subject which was now attracting much attention, and on which opinions were variously expressed by many experienced professional men. The illustration

of facts and data such as Mr. Sowerby had written were aids to a correct understanding of the theory of the supposed rise or depression of our Coast line, which according to his paper had not taken place, as the apparent rise or depression were due solely to the change of mean sea level, brought about by certain influences of the tidal wave. The Model Charts illustrated Mr. Sowerby's statement very clearly, and Mr. Firth hoped Mr. Sowerby would, as contemplated, favour this Society with a further paper on the subject at some early date. Mr. Firth further remarked, that the expense of colouring the model charts was almost beyond the means of the Society, but Mr. Sowerby had very kindly offered to help in that matter, so that the Society would be relieved of some considerable expense on that head.

Mr. Sowerby remarked, that he would have much pleasure in preparing the charts. That this method of treating charts is not unknown to Hydrographers; it showed the bed of the Ocean in a remarkably clear manner, and by a careful study of such charts, the peculiarities of coasts could be ascertained. He intimated his intention of preparing a paper on the great tides of the Indian Ocean, the peculiar oscillation of which within 30 degrees (1800 miles) was quite a discovery, and deserved further investigation.

It was then proposed by Dr. Birdwood, seconded by Mr. Atmaram Pandurang, and unanimously carried, that Captain Morland was entitled to the best acknowledgments of the Society for Vol. 18 of the Transactions laid before them.

On the motion of Dr. Birdwood, seconded by Mr. Dhirajlal Dalpatram, the best thanks of the Society were voted to the Office-bearers for their zealous and effective services during the past year, and the meeting adjourned.

SESSION 1868-69.

First Meeting.—*November 26th*, 1868.

The ordinary Monthly Meeting of the Bombay Geographical Society was held on Thursday, the 26th November 1868, at 5 p. m.

Present.—J. Burgess, Esq., F.R.G.S., M.R.A.S., *Senior Member*, in the Chair; Captain G. F. Henry; J. McDonald, Esq.; Javherilál Umiashanker Yajnik, Esq.; Dhirajrám Dalpatrám, Esq., G.G.M.C.; D. E. Gostling, Esq., *Members;* and Lieutenant Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary.*

The Minutes of the last Meeting were read and confirmed.

Elections.—William Sowerby, Esq., C.E., F.G.S., who was duly proposed and seconded at the last Meeting, was, after Ballot, declared a member of the Society. R. Proctor-Sims, Esq., C.E., F.R.G.S.; and Náráyan Vásudevji, Esq., were admitted under Rule XXII. of the Society.

Several donations to the Library were announced, for which the best thanks of the Society were voted to the donors.

Among the letters read before the Society, was the following correspondence on the subject of the Anglo-Vernacular Index of Indian Geographical names :—

No. 1055.—General Department.

Bombay Castle, 5th June, 1868.

Letter from the Honorary Secretary to the Bombay Geographical Society No. 13, dated 20th May 1868, with accompaniment—stating, with reference to Government Resolution No. 655, dated 8th April 1868, that Government appear to have misunderstood the proposal of the Society with regard to the preparation of an Anglo-Vernacular Index of Indian Geographical names, and explaining their object more explicitly.

Resolution.—Government regret that the Resolution of the 8th April should not have been understood by the Geographical Society.

2. An Index or List of Places which is to be at once geographical, etymological, historical and statistical, though called an Index, will not be very dissimilar in character from a Gazetteer, and it was thought that the Government Gazetteer Committee, with the materials which they will have at their command, would be able to give the Geographical Society valuable aid in the preparation of such a work as the Society have in view.

3. Government will be very glad to render the Society assistance in the publication of an independent work, and the returns obtained by Mr. Erskine will be placed at their disposal.

4. With regard, however, to the employment of Mamlutdars, the Society have over-estimated the leisure time of those hard-worked Officers, as well as their capacity for furnishing the information wanted by the Society. It is no reflection upon the body of Mamlutdars to say that the majority of them are destitute of scientific attainments; that

they are unable to determine the latitude and longitude of p
in their districts, or the altitude of mountain peaks; and, fur
that their knowledge of Sanskrit and Ancient History cann
depended upon.

5. Should the funds of the Society be able to afford to pay
educated persons to collect the information, His Excellency in Co
will give the necessary orders to the Revenue and Political Office
give them every assistance they require.

F. R. S. WYLLIE,
For Acting Chief Secretary to Governme

To

The HONORARY SECRETARY to the BOMBAY GEOGRAPHICAL SOC
The DIRECTOR of PUBLIC INSTRUCTION.
The REVENUE COMMISSIONER N. D.
The REVENUE COMMISSIONER S. D.

No. 1811.

EXTRACT from the Proceedings of the Government of Bombay, in General Department, dated 30th September, 1867.

Read the following papers:—

Letter from Captain J. Morland, Honorary Secretary, Bo
Geographical Society, to the Chief Secretary to Government, E
bay, No. 79, dated 16th September 1868.

With reference to the Government Resolution No. 1055, Ge
Department, dated the 5th June last, I have the honor, by desir
the Bombay Geographical Society, to enclose copy of a letter rece
from Mr. Burgess on the subject of the proposed Index, for the in
mation of Government, and to state that the Committee appointed
compile the Index entirely concur in the views expressed by Mr. Bur

Letter from J. Burgess, Esq., to Captain J. Morland, F.R.
&c., Honorary Secretary, Bombay Geographical Society, dated
June 1868.

I have read with some surprise the Government Resolution No. 1
It seems strange that Government should so misunderstand the p
of our Committee as to imagine that any member of the Geograp
Society expected latitudes and longitudes, altitudes, and Sanskrit, f
Mamlutdars. All the Society wanted was the correct spelling of
villages and other local names in their respective districts; how

each is from some of the more important ones; whether fairs (*melas*) are held at any, and when; what notable temples or ruins are near or at any of them; and any other item of local knowledge they might personally possess; and these Officers must be very hard wrought indeed if they could not find time to fill up a sheet of foolscap each, which at most would be sufficient to contain all the desiderata required.

In paragraph 2, Government seems still to insist that the Committee's Index is a Gazetteer. Now it bears about the same relation to a Gazetteer that a small Dictionary does to an Encyclopædia. The former contains many words, the latter does not; but at most it gives their roots and meanings, and does not discuss their history, or the ideas and subjects they represent. So the Committee's Index is intended to comprehend every name on the maps of India (and most of them at least twice over in different forms), with their localities, and such memoranda as can be given in two or atmost three lines on an average to each. The latitudes, longitudes, and historic information, of course, must be supplied by the Society, and the Mamlutdars were only expected to supply the pure native orthography, and any other local information they possessed.

I do not understand paragraph 5. If the Society could afford to pay well educated persons to collect the information by going about the country it would not require any very special assistance from Revenue and Political Officers; and, on the other hand, the Committee of the Geographical Society, although not paid for the work, are collectors of the information required, and, for myself, as a Member of that Committee, I am prepared to undertake for the Society at least half the works mentioned in paragraph 6 of the "Plan of the Index," and to give every assistance in supervising the whole of the latitudes and longitudes, contributing at the same time all the other information required that I am possessed of, and all I ask is the spare time of the Society's Clerk to copy for me and arrange the names in alphabetical order, or do such work for me as he may be fit for.

Government deserves our thanks, however, for having consented to place at the disposal of the Society Mr. Erskine's returns of population in 1851; and it would be well to apply for them at once, and set the Clerk to work on them. I shall be most happy to guide him in the work to be done.

It is gratifying to find the Government of India so well disposed towards the Society's scheme. We have, in paragraph 5 of the "Plan,"

agreed to use native characters, and a uniform system of spelling the transliterated names, viz., the system practised by English and Continental Orientalists; and I cannot help regretting that the ill-advised scheme of the Bengal Asiatic Society (a scheme adopted by no one else but its projector, the late Professor H. H. Wilson) should be approved of

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RESOLUTION.—The request of the Geographical Society as now modified may be complied with, and the Collectors should be desired to obtain from all Mamlutdars, and forward to the Secretary, Geographical Society, a list in the Vernacular, of all towns and villages in their charges, giving any particulars as regards Melas, Jatras, Bazars, and old or celebrated temples, or other buildings and ruins, for which they may be famous.

2. The papers named in the penultimate paragraph of Mr. Burgess' letter should be placed at the disposal of the Society.

Ordered that copies of the above be forwarded to—

The HONORARY SECRETARY to the BOMBAY GEOGRAPHICAL SOCIETY, with the papers referred to in paragraph 2.

The DIRECTOR of PUBLIC INSTRUCTION.

The REVENUE COMMISSIONER N. D.

The REVENUE COMMISSIONER S. D.

All COLLECTORS, SUB-COLLECTORS, and the FIRST ASSISTANT COLLECTOR in charge PANCH MAHALS.

The ORIENTAL TRANSLATOR to GOVERNMENT.

F. R. S. WYLLIE.

For Acting Chief Secretary to Government.

Captain Morland then read the two papers announced for the evening:

1. Notes on Annesley Bay, by Edwin Dawes, Esq., late I. N.

2. Copy of a Despatch addressed by H. A. Churchill, Esq., C.B., Political Agent to H. M.'s Principal Secretary of State for India for Foreign Affairs, on the subject of the supposed survivors of the "St. Abbs," contributed by Government.

On the motion of Captain Henry, seconded by Captain Morland, the best thanks of the Society were voted to Mr. Dawes for his very intersting and valuable paper, and the meeting adjourned to next month.

SESSION 1868-69.

Second Meeting.—*March 18th*, 1869.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 18th March, at 5 P.M.

Present.—Dr. Bhau Daji, Hon. M.R.A.S., *Senior Member*, in the Chair; F. J. Candy, Esq., M.A.; Javherilal Umiashankar Yajnik, Esq.; J. Mackinlay, Esq., F.R.G.S., M.R.A.S.; Rao Saheb Vishvanath Narayan Mandlik; J. Burgess, Esq., F.R.G.S., M.R.A.S.

Mr. Burgess officiated for Captain Morland, who was unable to be present at the Meeting in consequence of ill-health.

The Minutes of the last Meeting were read and confirmed.

Election.—Lestock Reid, Esq., C.S., having requested admittance, was elected a Member under Rule XXII. of the Society.

Members proposed.—Lieut. G. O'B. Carew, Dock-Master, Bombay, and Jamsetji Dhanjibhai Vadia, Esq., Master Builder, H. M.'s Dock-yard, were proposed Members of the Society.

Among the donations laid before the Society, there was an excellent photograph of the Bombay Harbour taken from the Time Ball Tower on the North-East Bastion of the Castle, showing the fleet of 250 vessels returned from the Abyssinian Expedition, and other ships in the Harbour, presented by the Harbour and Pilotage Board.

Among the letters read before the Society there were the following:—

1. From the Secretary to Government, General Department, forwarding the following copy of a despatch and of its enclosure from Her Majesty's Secretary of State for India regarding the alleged survivors of the ship "St. Abbs."

Political.—No. 8.

His Excellency the Right Honorable

THE GOVERNOR in Council, Bombay.

India Office, *London*, 20*th January* 1869.

Sir,—I have to acknowledge the letter of your Excellency's Government, No. 70, dated 7th November 1868, with enclosed Memorandum

collected at the Seychelles, by Captain H. A. Fraser, late of the Indian Navy, respecting the alleged survivors of the "St. Abbs" and copy of Mr. Churchill's despatch to Lord Stanley, No. 22, of the 31st July 1868. Copies of these interesting documents had already been furnished to the Royal Geographical Society of London by the Foreign Office.

Seychelles, 16th April 1868.

2. I avail myself of this opportunity to forward, for the information of your Excellency's Government, a transcript of a valuable report on the same subject by Mr. S. Ward, Civil Commissioner at the Seychelles, which has been supplied to this office by the courtesy of the Colonial Department of Her Majesty's Government.

3. I regret to find that these reports are unfavorable to the probability that any survivors of the shipwreck of the "St. Abbs" are yet alive.

I have the honor to be, &c.,

(Signed) ARGYLL.

Civil Commissioner S. WARD to Governor Sir H. BARKLY.

GOVERNMENT HOUSE, *Seychelles*, 16*th April* 1868.

SIR,—From letters lately published in the public journals in England, and from a paper read at a Meeting of the Royal Geographical Society by Colonel Rigby, formerly Political Agent at Zanzibar, on the subject of a vessel named the "St. Abbs," wrecked on Juan de Nova in 1855, it appears that a strong belief is still entertained in the existence of a large portion of the passengers and crew, who are supposed to have been saved upon the after part of the vessel, to have drifted to Magadesho on the East Coast of Africa, and to be now in captivity among the Somalis far in the interior.

2. As this matter has lately engrossed so much public attention that the Government has been urged through the papers to take some steps for the release of these supposed captives, I think it right to bring forward some arguments based upon local experience and investigation, which induce me to think that none of the passengers and crew, beyond those who succeeded in landing on Juan de Nova,

escaped, and that although there may be white men in captivity among the Somalis, it is most improbable to suppose that they could have belonged to the ill fated "St. Abbs."

3. In the protest made by the Captain on his arrival at Seychelles, a most unsatisfactory document, he gives the names of the individuals saved, and states that in the course of the night after these few had succeeded in reching the shore the major portion of the ship disappeared, but he does not give any reason for this "disappearance." It was subsequently ascertained that three men, not identified, got on to one of the smaller islets or uncovered portions of the reef, but perished miserably for want of water.

4. After the vessel struck all discipline on board was at an end; the spirit room was broken into, and hopeless confusion prevailed. The violence of the wind and the sea was so great that no boat could live, only the fore part of the vessel was upon the reef, and there was no doubt whatever that during the night the wrecked ship broke in two, close to the foremast, and that all the after part, about two thirds, sank in the deep water outside the reef. The forepart was driven along the reef to a distance of a quarter of a mile from the spot on which she struck, and the remainder was clearly seen by the men who made the salvage, and is, I am assured, still visible when the water is smooth and clear, part of the cargo consisted of heavy machinery for two steam vessels building at Bombay, the weight of which would effectually counteract the action of the currents, and keep the ship in the place where it sank. Six months after the wreck a hundred barrels of beer and porter released by the bursting of the planks floated out of the hull and were saved.

5. Admitting that the poop and a portion of the bulwarks had floated it is barely credible that a mass of timber, borne away from the body of a ship by the violence of a raging sea, would have held together sufficiently to transport in safety, with no steering apparatus, a number of men from Juan de Nova to Magadesho, a distance of over a thousand miles under even the most favorable conditions of wind and currents. But at the season of the year when the "St. Abbs" was wrecked, the South East Monsoon was at its fullest vigour, and judging by what is known respecting the currents in these seas, their "set" would not have carried the debris of a wreck in the direction of Magadesho. The south-east wind and the well ascertained outward set of the currents at this season would have driven it rather in the

direction of the Seychelles than of the African Coast. The latter course would be easy enough for a ship properly managed, as she would have the wind on her quarter, but impossible for an ungovernable mass of timber at the mercy of the wind and the waves.

6. I may mention several instances which have come within my own knowledge, all tending to prove that the direction taken by any floating mass would have been during the South East Monsoon N.N.W. in lieu of N.N.E. Last year the "Borodino," an American vessel, went on shore on Juan de Nova at the same time of the year that the wreck of the "St. Abbs" took place. The charts, instruments and everything that could be handed over were put on shore, but during the night, when the tide was full she floated off, and eventually came up to within a short distance of this Island. She was then making so much water that the men on board were compelled to abandon her, and landed upon North Island, sixteen miles distant from Mahé. Another vessel dismasted near Cape Amber arrived here without a rudder under a small jury rig driven to Seychelles by the wind and the currents. The "Volanti" was last year burnt at sea 560 miles to the south of the Seychelles. The crew escaped, and made this port in the ship's boats without any difficulty, running before the wind all the way. The vessel blew up soon after the boats left, and portion of her cargo, a large iron tank, and a barrel full of boots, were stranded upon Silhouette Island, the most westward of the Seychelles group, a short time afterwards. All these facts tend distinctly to prove that, if a broken portion of the "St. Abbs" really floated off, a most unlikely occurrence, it would, according to all recognised theories, have drifted in the direction of the Seychelles rather than in that of Magadesho.

7. There is no reason to doubt that many articles forming part of the cargo of the "St. Abbs" were brought to Zanzibar, but the above arguments are greatly against the possibility of their having been, in the first instance, obtained from Magadesho. Arab vessels are constantly trading in the vicinity of the Comoro Islands and on the coasts of Madagascar, and the articles in question were, in all likelihood, picked up south of Zanzibar, and either taken there direct, or further on to Magadesho, from whence they were eventually brought down to Zanzibar. This could not have happened during the continuance of the South East Monsoon, as no Arab vessel would attempt to come south at that season, the wind being directly contrary.

8. It is also notorious that it is extremely difficult to arrive at any-

thing approaching to the truth with respect to occurrences on the East coast of Africa. Dr. Livingston's death was reported, in official dispatches, with a number of minute details, and exact particulars to all appearance saturated with truth; the advent of the "Mafites," the attack, the fight, the number killed by Dr. Livingston, and even the surgical appearance of the wound received by the "Martyr Traveller," were all most faithfully described; all of which details we are now informed are entire fabrications. Arab reports should always be received with the greatest caution, especially with regard to the supposed captives "far in the interior," for although Magadesho belongs to our ally the Sultan of Zanzibar, no information respecting either the captives or the wreck has ever been obtained from him.

9. Considerable stress is laid on the fact that some letters, in English character, were cut upon a hide brought to Zanzibar from the mainland, but it has been found impossible to trace the origin of this hide, and the purchasers of it are not at all prepared to state that it did not come from Aden. Such being the case, it can hardly be accepted as evidence of the existence of white captives "far in the interior," and it is to be regretted that hopes should have been raised in the minds of the relatives and friends of those wrecked in the "St. Abbs" on such very slight grounds.

10. The large portion of the vessel still remaining in the deep water just outside the reef upon which she struck, the extreme improbability of any portion which may have become detached from the ship having retained sufficient footing power to have been the means of saving a number of lives in the very heavy weather which prevailed at the time; and the arguments put forward above with respect to the direction taken by any ungovernable mass at the mercy of the winds and currents, cannot, I think, but lead to the conclusion that none of the unfortunate people who were left upon the "St. Abbs" at the time that the after part disappeared, are still in existence, and that the white captives, if actualities, must have belonged to some other unfortunate vessel wrecked upon the Somalee Coast.

I have, &c.
(Signed) S. WARD.

His Excellency Sir H. BARKLY, K.C.B.,
&c. &c. &c.

(True Copies.)

R. RYAN.
Assistant Secretary.

2. From the Acting Chief Secretary to Government, Political Department, forwarding an Extract (para. 1) from a letter from the Political Resident at Aden, and of the statement made by Haji Othman relative to the fate of the Baron von der Deken :—

Extract para. 1 *from a letter from the Resident at Aden, dated 27th November No.* $\frac{470}{1262}$ *of* 1868.

Para. 1. I have the honour to forward the accompanying statement made before Captain Goodfellow, 1st Assistant Resident, by Haji Othman bin Abdulla, a resident of Brawa, near Magadoxo, on the East Coast of Africa. This man was engaged as an Interpreter to Mr. Kinzlebach, the person who was sent to enquire after the fate of the Baron von der Deken. On Mr. Kinzlebach's death the Interpreter was returning from Zanzibar towards Aden, when from stress of weather he was driven into the port mentioned in his statement. The Haji says that the man he said and spoke to had a shaven chin, but wore a moustache, and looked like a Hindoo, he spoke Somalee fluently. I forward his statement, which was given gratuitously, as it may be of interest; it may hereafter throw some light on the supposed captives said to be in the interior of Africa: possibly the fair man said to be in the centre of Africa about the latitude of Murka, and supposed to be survivor of the "St. Abbs," may be the three Hindoos reported in the accompanying statement.

(True Extract.)

C. GONNE,

Assistant Secretary to Government.

Translation.

"I, the Haj Othman bin Abdulla, a native of Brawa, state, that we sailed from Bandar Murkah on the 19th Jumad-al-akhir 1285, on a Tuesday for Mukalla; on the Wednesday and Thursday following we encountered a heavy storm opposite Haskul, in the land of the Abgal, in consequence of the high wind we put into Haskul; and remained the Friday and Saturday in the port. We could not land in consequence of the heavy weather, which however abated a little on Saturday night, and on Sunday morning we landed and went to the bir, the watering place; we found there people of the Abgal watering their beasts, and amongst their number a man of a reddish colour, not very tall or short, but of moderate statute, his right ear was bored. I asked concerning him, and said to him, who are you. He replied I

am a Banian. I said if you are a Banian you should know Arabic. He said no. I replied how did you learn Somalee, and how did you get amongst these people. He said I did not intend to go to the Somali Country, but I was shipwrecked, and we landed at Haweiyeh, and a number of people met us on the shore, and they plundered our property, and killed a number of us, all but three,—and they sent us into the interior of the country. I asked him how long have you been in their hands, he said 12 years or thirteen, with two other my companions and they are now in the villiage, and I am a servant to these people, and water their cattle with them, and my companions do likewise. I asked him what do you eat. He replied grain (jowaree) and meat and milk. I asked him are you married to any one amongst these people. He replied no, I am not. I said are you still of your former religion, or have you turned Muhammadan. He answered in my own religion."

"Our sailors then took their water, and gave some grain in exchange for the water, and we went on board our boat the same day, and set sail, viz. on Saturday 24th Jumad-al-akhir 1285."

True translation of a written statement delivered to me this 27th November 1868 by the said Haj Othman bin Abdulla ab-Arawee.

(Signed) G. R. GOODFELLOW, Captain,
Assistant Resident, Aden.

I endeavoured to elicit further information from Haj 'Othman by questioning him a few days ago, but could get nothing further than what is recorded in his statement, which he wrote down at my request.

(Signed) G. R. GOODFELLOW, Captain,
Assistant Resident, Aden.

(Signed) E. L. RUSSELL, Major General,
Resident at Aden.

Aden, 27*th November* 1868.

(True Copies.) A. CARRON,
Assistant Secretary.

The paper "Notes on the Hot Springs of Lasundra, in the Kaira Zilla," by Javherilal Umiashankar Yajnik, Esq., was then read by the author.

At the conclusion of the paper, it was proposed by Dr. Bhau Daji, seconded by Rao Saheb Vishvanath Narayan Mandlik, and unanimously

ırried, that Mr. Javherilal was entitled to the best acknowledg-
ıents of the Society for his valuable and interesting paper. The
neeting then adjourned to next month.

SESSION 1868-69.

Third Meeting.—*April 15th*, 1869.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 15th April, at 5 P.M.

Present.—Captain G. T. Robinson, *Vice-President*, in the chair; J. Burgess, Esq., F.R.G.S., M.R.A.S.; Javherilal Umiashankar Yajnik, Esq.; Bhagvandas Purshotamdas, Esq.; The Hon'ble J. S. White, B.A.; J. Connon, Esq., M.A.; Manekji Khursetji, Esq., F.R.G.S., F.R.S.N.A.; and Lieut. W. L. Searle, F.R.A.S.

Mr. Burgess, at the request of the Vice-President, officiated for Captain Morland, Honorary Secretary, who had proceeded to Europe on sick leave.

The Minutes of the last Meeting were read and confirmed.

Elections.—Lieutenant G. O'B. Carew, and Jamsetji Dhanjibhai Wadia, Esq., who were duly proposed and seconded at the last meeting, were, after ballot, declared members of the Society. Wellington Gray, Esq., M.B., having requested admittance, was elected a member under Rule XXII. of the Society.

The donations laid before the Society comprised many valuable publications transmitted by the Smithsonian Institution, Boston Society of Natural History, and other Societies of America. There was also a copy of the map of the Route from Annesley Bay to Magdala, executed by the officers of the Indian Survey, and presented by the Secretary of State for War.

Captain Robinson then read the following letter addressed to him by Captain Morland on the eve of his departure to Europe:—

Dear Sir,—As I am compelled to leave India by the next m
in consequence of failing health, I beg you will be good enou
to intimate to the Society, at their next Meeting, the cause
my hurried departure, and take measures for the nomination of

successor. I would suggest that the officiating secretaryship be offered to Mr. Burgess, who has been evincing so much interest and zeal in furthering the objects of the Society since his connection with it. He is also entitled to the honour by his having undertaken the compilation of the Anglo-Vernacular Index of Indian Geographical Names contemplated by the Society.

I am, dear Sir,
Yours very sincerely,
HENRY MORLAND.

2nd April 1869.

On the motion of Captain Robinson, seconded by Mr. Manekji Khursetji, Mr. Burgess was unanimously elected Honorary Secretary to the Society pro tem.

Mr. Burgess, on accepting the appointment, remarked that as he was required to officiate for Captain Morland only for a year, he was most happy in being able to accede to the Society's wishes.

Geological Action on the Kathiawad Coast, &c.

The following correspondence, received from the Bombay Government on the subject of geological action on the Káthiáwaḍ Coast and in the Raṇ, was then read :—

From Colonel W. W. ANDERSON, Political Agent in Káthiáwaḍ.

To C. GONNE, Esq., Acting Chief Secretary to Government, Bombay, Political Department.

2nd December 1868.

Sir,—Referring to former correspondence on the subject of the encroachments of the sea in the Raṇ of Kachh and on other parts of the coast of Káthiáwaḍ, I now have the honour to forward copy of a communication from my Assistant, Captain Watson, showing the results of the observations made by him during a recent visit to the shores of the Gulf of Kachh.

2. As the subject is one of great interest both to the geologists as well as to the traders in those seas, Government may perhaps deem it advantageous to place this paper at the service of scientific bodies and others interested in the question.

I have the honour to be, &c.,
W. W. ANDERSON,
Political Agent.

Káthiáwaḍ, Political Agent's Office,
2nd December 1868.

From Captain J. W. WATSON, Political Assistant, Káthiáwad in charge Western District.

To Colonel W. W. ANDERSON, Political Agent, Káthiáwad.

Rajkot, 15*th October* 1868.

SIR,—In a recent trip to the coast of the Gulf of Kachh and the Ran, I made a point of personally visiting, where practicable, the southern shore both of the Gulf and of the Ran, and at the same time to collect all information that was practicable regarding the encroachment of the sea on the land, and of the changes, if any, in the level of the Ran. From all I saw and heard I am led to differ entirely with a report of Captain Hebbert's, No. 40 of 1867, addressed to the Political Agent, Káthiáwad. It is, however, but fair to say that Captain Hebbert never visited the Ran in person, and the opinions enunciated in the report above quoted are gleaned from Mehtas and others who are of all persons the most unlikely to know anything about changes of level, and who are also most unqualified to judge. In the only case where boatmen appear to have been asked, *i. e.* regarding the Jhinjura Wowania creeks, they unanimously declared that the creeks were pushing their way further into the Ran, and that the increase of water in the Ran itself, though slight, was nevertheless perceptible. Nor is it apparent why Captain Hebbert should consider the increase of Ran at the mouth of the Dadhiali was caused by the river and not by the sea. The rivers of India have notoriously lessened, and not increased, in volume, and the rainfall has in Gujarat of late years diminished owing to the reckless way in which hills have been denuded of forest, and the land cleared of trees and brushwood. Further, unless the level had changed, the sea could not have encroached so far in excess of its former limits. Captain Hebbert says in paragraphs 21 and 22 that—

"No changes have been noticed in any other creeks or on the coast west of Navanagar, though an agent was specially sent to make enquiries at Seryah, Pindari, and the islands of Ajar.

"Neither have any changes whatever been noticed along the southwest coast of Káthiáwad, Miyani, Purbandar, Mangrol," &c.

2. I shall be able to prove that, as far as paragraph 21 is concerned, Captain Hebbert was in error, and from what I know of the southern and western coast, as well as the southern shore of the Gulf of Kachh and the Ran, I am inclined to think that an intelligent investigation of Miyani, Purbandar, &c., would show [illegible] t side is no

exception to the general rule. Captain Hebbert seems to have been influenced throughout his report by an idea that a depression of level could not be caused by volcanic agency, and that *all* manifestations of volcanic energy must necessarily tend to an elevation rather than a depression of level.

3. For the above reasons I have addressed the Chiefs of Navanagar, Morvi, and Mallia themselves, and append their replies to this report.

Navanagar states that the sea is encroaching rapidly at the islands of Ajar, Chaka, Bahidar, &c., in the Gulf of Kachh. That Ajar was once a portion of the main land, and that it has but recently, *i. e.* within the last 100 years, by the action of the sea, become an island. Even now at low tide it is impossible for a foot-passenger to pass over to Ajar from the main land: two small creeks alone have to be swam across; but the sea is gradually rising in level, and the passage becomes daily more difficult. Chaka and Bahidar, &c. were once notable islands, but are now covered by the salt water at high tide. With reference to these islands, Colonel Rigby, in his report No. 2 of 1865, to the Acting Secretary to Government, Bombay, states in his 5th paragraph—

"They belong to a very extensive archipelago of islands and reefs which extends all along the coast of Hálar, and which has probably become detached from the main land during a recent geological period by the encroachment of the waters of the Gulf of Kachh."

With reference to the island of Ajar, Colonel Rigby states—

"The island contains three wells of brackish water, and there are remains of several large tanks and ancient ruins of houses."

Thus showing that it once was a flourishing settlement, and that it has been doubtless reduced to its present condition by the encroachments of the sea.

4. At the port of Seryah the advance of the sea is not so marked, but it increases rather than diminishes. At the little village of Beri—the port of Navanagar—the advance of the sea has been most marked. The sea has forced its way up the mouth of the Nagra and Ranmati rivers, which unite near Navanagar, and converted the lower part into a tidal creek, the land on either side being covered by the sea water at high tide for miles. This advance of the sea has been so marked in the last 20 y[illegible] Nagar Darbar have now thought of building a [illegible] nificant creek, and a raised road and

bandar-head have been lately constructed there by His Highness the Jam, at a cost of three lakhs of rupees. Near Suchana are two small islands connected with the shore at low water, but which become islands at high tides. The land of these islands is being rapidly washed away, and the distance between the islands themselves is gradually increasing. The sea has encroached about 4 feet inland along the whole line of coast between Suchana and Balachedi—a distance of about 1½ miles,—while it has much enlarged the several small islands (Raṇs) between Suchana and Juria, including the Raṇ of Balachedi itself. At Balambha the progress of the sea is even more marked. The Balambha authorities report that so late as 1808, a foot passenger could cross over from Balambha to Rahur and Tuna in Kachh, and the Nagar family bards report that when Jam Rawal crossed over from Kachh about 450 years ago, his whole army crossed over dry foot from Tuna in Kachh to Balambha in Kathiawaḍ, and fought a great battle near Manamora or Bhimkuta, with the Deda Chief Tomachi. Jam Rawal was victorious, and subsequently founded the principality of Navanagar.

5. At Manamora the sea water formerly reached as far as the mangrove swamp, but now it has advanced a mile further and arrived near to Phatel Dui. At Phatel Dui formerly large crops of grass used to be cut, but now salt is made there, and from the increase of the sea water a deep channel or creek has been formed, and Navanagar is anxious to open a new bunder here.

6. With regard to Jhinjura the deep channel that has been formed by the sea through the mangrove swamp formerly reached to a spot called the Suiwalunes, whereas now this channel has pushed its way during the last 20 years two miles further up, and is now close to Jhinjura village. Further, the road from Bahdra to Balambha, which was formerly a good one and in arable land (indeed formerly much arable land lay to the north of this road) is now actually impassable for ordinary carts, and the greater part of the land to the north of this road has been washed away by the encroachment of the sea and has become Raṇ.

7. There are in the Raṇ the remains of a village called Sat Shudo, on the route by which Jam Rawal travelled with his army when they invaded Káthiáwáḍ. The Páliyas or memorial stones are said to be still visible; anyhow, living men depose to having seen them.

8. The Chief of Morví writes that the progress of the sea at

Wowania is equally marked: that he built in 1835 an embankment in the Ran for vessels to come up alongside of and cast anchor, and either load or unload their cargoes; when the embankment was built it was some few feet above high water mark, but now it is covered by the sea at high water, and a new embankment has been built very much higher than the former one. Nevertheless last year the sea overtopped even this one, and where previously water was but 6 feet deep it is now 12 feet. Formerly only a very small boat could cross over from Wowania bandar in Káthiáwad to Jhinjí bandar in Kachh, whereas large vessels of 100 khandis tonnage can go there now with ease. Colonel Keatinge and I met the Morví Chief at Wowania in 1863. The Morví Chief informs me that on the very spot where our tent was pitched—a spot where sea water had never then reached to—is now covered by sea water to the depth of 3 feet. Formerly there was a footpath from the Morví village of Barol to Jhinji in Kachh. This is now impassable from the encroachment of the sea, which now never recedes from thence as it formerly was wont to do.

9. The Chief of Mallia forwards two depositions showing the advance of the sea at Mallia. So great has been the advance of the sea, which is forming a deep channel in the Ran, that there is every prospect of Mallia soon becoming a seaport. The Chief has therefore made overtures to Kachh relative to opening a bandar. Translations of the depositions sent by this Chief are appended to this report.

10. It is all very well to call all this mass of facts crude, and to place no reliance on traditions like that of the crossing over of Jam Rawal, and to say that the fact of the encroachment of the sea does not fit in with certain geological theories, which in all probability in another 10 or 12 years will be superseded by others, but when we see that the action of the sea is precisely the same on the southern coast of Káthiáwad, and that in the same way as the islands of Bet, Chaka Nura, Ajar, Bahidar, &c., once formed part of the coast of Káthiáwad, and have now by the encroachment of the sea become islands, so on the southern coast, Perim, the Shiyal Islands, and many others also once formed part of the mainland, and have by the same depression of level of the land and action of the sea been converted into islands, one is led to conclude that the theory broached by the writer in the *Saturday Review* is not wholly devoid of a foundation in fact, however ill it may suit the ideas of amateur geologists, who without personal investigation dispose of every new theory according, not to facts, but to certain

bandar-head have been lately constructed there by His Highness the Jam, at a cost of three lakhs of rupees. Near Suchana are two small islands connected with the shore at low water, but which become islands at high tides. The land of these islands is being rapidly washed away, and the distance between the islands themselves is gradually increasing. The sea has encroached about 4 feet inland along the whole line of coast between Suchana and Balachedi—a distance of about 1½ miles,—while it has much enlarged the several small islands (Raṇs) between Suchana and Juria, including the Raṇ of Balachedi itself. At Balambha the progress of the sea is even more marked. The Balambha authorities report that so late as 1808, a foot passenger could cross over from Balambha to Rahur and Tuna in Kachh, and the Nagar family bards report that when Jam Rawal crossed over from Kachh about 450 years ago, his whole army crossed over dry foot from Tuna in Kachh to Balambha in Kathiawaḍ, and fought a great battle near Manamora or Bhimkuta, with the Deda Chief Tomachi. Jam Rawal was victorious, and subsequently founded the principality of Navanagar.

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8. The Chief of Morví writes that the progress of the sea at

I make the following statement in the Court of Thakur Morji of Mallia :—

My name is Lalo, my father's name is Mandan, by religion Musalman, caste Miyana, age about 50 years, occupation cultivator, resident of Mallia.

I sail in boats for these last 30 years, and say that the water of the sea, in our Raṇ, comes and dries at the same time as before. There are two *nalas* come from Hanjthal, the water of which encroaches into the land with such a force that it cuts the land a mile or two every year. The *nalas* which come touching the coast of Kachh is the most penetrating one, and the other, which comes in middle of the Raṇ towards our side, is not equal in force to that of the former, but longer and broader.

About 20 years ago the carts were used to pass near the Morvi villages to Jajsur and Baral, which they do not now, also on the road of Wothia the water which formerly got dried up remains now all covering the land.

The tide of the sea penetrates as far as half a koss at Nowa Tullao on the frontier of Morvi and Mallia. Samvat 1925, Asho Vad 9th, Halari.

I make the following statement in the Court of Thakur Morji of Mallia :—

My name is Ibraham, my father's name is Doso, religion Musalman, age 50 years, occupation service, resident of Morvi, village of Bagasra.

In Samvat 1898 we had established ourselves at Tonk to graze our cattle, and the road by which we used to cross the Ran was two miles from the expanse of water of the sea, but it has gradually begun to encroach towards the said road. In last year the water had come up to the old cart road leading from Mallia to Janji. The sea has made two narrow deep creeks—one on the Waghar coast, and the other on the Káthiáwad coast towards Mallia. These two creeks, especially the former, appear to have been advancing with great rapidity. The footpath in the Raṇ leading to Waghar Coast, which was at a far distance from the sea water, is now generally covered with it, and one of the creeks has advanced so far as to meet it. Several halting-places or bisamva on the Wandhia road were seen 10 years ago from a great

distance, but now these places are all surrounded by the water. Samvat 1925, Asho, Vad 9th, Halari.

(True copies)

W. W. ANDERSON, Political Agent.

After a conversation of some length, in which many of the members took part, the best thanks of the Society were voted to the Right Hon'ble the Governor in Council for the interesting communication, and the meeting adjourned.

SESSION 1869-70.

First Meeting, *December 16th*, 1869.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their rooms, Town Hall, on Thursday, the 16th December 1869, at 5 P.M.

Present.—Sorabji Jamsetji Jijibhai, Esq., *Senior Member*, in the chair; Captain J. E. C. Pryce, F.R.G.S.; J. Macfarlane, Esq.; W. Walton, Esq., C.E., F.R.G.S., F.A.S.L.; F. J. Candy, Esq., M.A.; Colonel J. T. Annesley; Dhirajram Dalpatram, Esq., G.G.M.C.; and J. Burgess, Esq., F.R.G.S., M.R.A.S., *Officiating Honorary Secretary.*

The Minutes of the last Meeting were read and confirmed.

Election.—Dastur Hoshang Jamasp, having requested admittance, was elected a member under Rule XXII. of the Society.

The Secretary remarked that the selection of a President in place of Lord Napier of Magdala could not be formally proceeded with in the Meeting of the Committee for want of a quorum. Captain Pryce, however, had agreed with him that the Hon'ble Mr. Justice Gibbs should be invited to accept the office. The sense of the Meeting was then taken, and the members present unanimously concurred and resolved that the proposal should be circulated to the Committee for approval.

Several donations to the Library were then announced, for which the best thanks of the Society were voted to the donors.

Several letters were read, among them the following:—

1. From the Superintendent, Royal Observatory, Greenwich; Registrar to the Bombay University; Librarian, Trinity College, Dublin; Registrar, Queen's College, Cork; Librarian, Glasgow College; Secretary to the Meteorological Committee of Bengal; Hydro-

grapher to the Lords Commissioners of the Admiralty; Secretary to the Madras Literary Society; Colonial Secretary, Tasmania; Superintendent, United States Naval Observatory; and Librarian, Literary and Philosophical Society of Manchester, acknowledging with thanks copies of Vol. 18 of the Society's Transactions.

From J. N. Lockyer, Esq., F.R.S., enclosing a prospectus and a copy of "Nature," a new scientific magazine, and promising to send weekly numbers in exchange for early copies of the Transactions.

From the Secretary to Government, General Department, forwarding a copy of the letter addressed by the Government of Bengal to Dr. W. W. Hunter, requesting him to render the Society any assistance in his power in the preparation of the Index.

From the Secretary to Government, Political Department, forwarding a silver medal commemorative of the discovery of the source of the Nile by Captains Speke and Grant, as the person for whom it was intended died before it reached Zanzibar.

The Secretary then observed that, at the last meeting, the Society had accorded their sanction for the appropriation of Rs. 1,000 from the Premchand Donation for making accessions to the Library, and completing the sets of the Journals, &c. of all the scientific institutions already in their possession, and the first instalment of the invoice was now laid on the table. He also submitted a long correspondence on the subject of the exchange of the Transactions, &c., made between this Society and other institutions. There being no further business before the Society, the meeting adjourned.

SESSION 1869-70.

Second Meeting, *February 24th*, 1870.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, on Thursday the 24th February 1870, at 5 P.M.

Present.—The Hon'ble Mr. Justice Gibbs, C.S., *President*, in the chair; Captain G. T. Robinson, *Vice-President*; Dhirajram Dalpatram, Esq., G.G.M.C.; J. N. Mendonça, Esq., G.G.M.C., Members; and J. Burgess, Esq., F.R.G.S., M.R.A.S., *Honorary Secretary*.

Visitors.—The Revd. J. S. S. Robertson, F.R.G.S., M.R.A.S., and Hormasji Merwanji Nárelwálá, Esq.

The Minutes of last Meeting were read and confirmed.

Elections.—The Right Revd. H. A. Douglas, D.D., Lord Bishop of Bombay, and the Revd. J. S. S. Robertson, F.R.G.S., M.R.A.S.

Several donations to the Library were announced, for which the best thanks of the Society were voted to the donors.

Letters were read from the Hon'ble Mr. Justice Gibbs, C.S., accepting the office of President of the Society; from the Principal Librarian, British Museum, and the Keeper of the Museum of the Antiquaries of Scotland, acknowledging copies of Vol. 18 of the Society's Transactions; from the Superintendent, Great Trigonometrical Survey of India, forwarding Report on the Operations of his Department for 1868-69.

The Secretary then read the paper announced for the evening :—

"Some account of the Navigation of the Narmadá, with remarks on the Gulf of Khambay, by William Sowerby, Esq., C.E., F.G.S."

On the motion of the Hon'ble the President, seconded by Mr. Mendonça, the best thanks of the Society were voted to Mr. Sowerby for his very valuable and interesting paper, and the meeting adjourned.

SESSION 1869-70.

Third Meeting, *April 21st*, 1870.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 21st April 1870, at 5 P.M.

Present.—The Hon'ble Mr. Justice Gibbs, C.S., *President*, in the chair; the Revd. J. S. S. Robertson, F.R.G.S., M.R.A.S.; R. G. Walton, Esq., C.E., F.R.G.S., F.A.S.L.; Dhirajram Dalpatram, Esq., G.G.M.C.; Captain G. F. Henry; Captain J. E. C. Pryce, F.R.G.S., members; and J. Burgess, Esq., F.R.G.S., M.R.A.S., *Honorary Secretary*.

The Minutes of last Meeting were read and confirmed.

Member proposed.—Khurshedji Nushirwanji Kámá, Esq.

Several donations to the Library were announced, for which the best thanks of the Society were voted to the donors.

Letters were read from W. E. Frere, Esq., F.R.G.S., ex-President of the Society, advising the despatch of his portrait, the execution of which the Society had left entirely to his discretion; and from Lieut.

Trotter, R.E., Deputy Superintendent, Great Trigonometrical Survey, forwarding for the acceptance of the Society eight published sheets of the Káṭhiawád Survey, and promising the others when published.

The portrait of Mr. Frere was exhibited for reception by the Society, and was considered a faithful likeness of their late President.

The following Resolutions were then proposed by the Hon'ble the President, and seconded by Captain Henry, and unanimously carried :—

1.—"That the thanks of the Bombay Geographical Society be tendered to Mr. Frere for the trouble he has taken in procuring his portrait for their Rooms, and especially for the excellent choice he has made in selecting Mr. Dickinson as the artist, by which the Society become possessed of a picture admirably executed—both as to the painting and the likeness. That the balance of the account be paid by the Secretary to Messrs. Forbes & Co."

2.—"That the Secretary take measures for the cleaning and restoring the portraits of Sir Charles Malcolm, Sir Alexander Burnes, and Captain Ross, and that when funds are available new frames corresponding with that just received with Mr. Frere's portrait be obtained."

There being no further business before the Society, the meeting adjourned.

SESSION 1869-70.

Fourth Meeting, *September 29th*, 1870.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 29th September 1870, at 5 P.M.

Present.—Dr. Bhau Daji, Hon. M.R.A.S., *Vice-President*, in the chair; Professor F. J. Candy, M.A.; J. Macfarlane, Esq.; Dhirajram Dalpatram, Esq., G.G.M.C.; Captain G. F. Henry; J. N. Mendonça, Esq., G.G.M.C., members; and J. Burgess, Esq., F.R.G.S., M.R.A.S., *Honorary Secretary.*

Visitors.—Captain J. Rankin, of the ship "Saladin," of London, and Hormasji Merwanji Nárelwálá, Esq.

The Minutes of last Meeting were read and confirmed.

Member Proposed.—Janárdan Gopál, Esq., Solicitor, H. M.'s High Court, Bombay.

Elections.—Khurshedji Nushirwanji Kámá, Esq., was, after ballot, declared a member of the Society. The Rev. W. B. Keer, S.P.G., having requested admittance, was elected a member under Rule XXII. of the Society.

Donations.—The following donations to the Library were announced, for which the best thanks of the Society were voted to the donors :—

1. Journal of the Royal Geographical Society of London, Vol. 39. Presented by the Society.
2. Proceedings of the Royal Geographical Society of London, Vol. XIV. Nos. 1 and 2. By the Society.
3. Proceedings of the Royal Society of London, Vol. XVII. Nos. 105 to 109. By the Society.
4. Bulletin de la Société de Géographie. (February to June inclusive.) By the Society.
5. Journal Asiatique, No. 56. By the Society.
6. Bulletino de la Società Geografica Italiana; Fasc. 3 and 4,—1869-1870. By the Society.
7. "Nature"—Weekly numbers April to August last. By J. N. Lockyer, Esq.
8. The First Annual Report of the American Museum of Natural History for 1870. By the Trustees.
9. Annual Report of the Board of Register of the Smithsonian Institution, Washington. By the Institution.
10. Astronomical and Meteorological Observations made at the United States Naval Observatory, 1866. By the Superintendent.
11. Results of the Magnetical and Meteorological Observations made at the Royal Observatory, Greenwich, for 1867. By the Royal Society.
12. Route from Matemma to Darmot, along the western shores of the Tana sea, by Dr. H. Blanc. By the Author.
13. Notes of a Visit to Gujarat, in December 1869, by J. Burgess, Esq., M.R.A.S., F.R.G.S. By the Author.
14. Notes of a Visit to Somnáth, Girnar, and other Places in Kaṭhiáwád, in May 1869, by J. Burgess, Esq., M.R.A.S., F.R.G.S. By the Author.
15. Records of the Geological Survey of India, Vol. III. Parts 2 and 3. By the Superintendent.
16. A Narrative and Diary of the Ocean Telegraph to India, by J. C. Parkinson. By the Directors.
17. Annual Report of the Sassoon Mechanics' Institute for the year 1869-70. By the Directors.
18. The Gazetteer of the Central Provinces, by C. Grant, Esq. By the Chief Commissioner.
19. Bombay High Court Reports, with Index, Vol. VI. Parts 2 and 3. By Government.
20. Report of the Revenue Administration of Oudh, for the year ending 30th Sept. 1869. 2 Parts. By Government.

21. Report of the Meteorological Reporter to the Government of Bengal, for 1869. By the Government of Bengal.

22. Report on the Harbour of Viráwal, in Kaṭhiáwáḍ, by T. Ormiston, Esq. By the Author.

23. Report of the Bombay Chamber of Commerce for 1859. By the Chamber.

24. Annual Statement of the Trade and Navigation of the Presidency of Bombay, for 1869-70. By Government.

25. The Local Annual Volume of the Trade and Navigation for the Province of Sindh, for 1868-69. By Government.

26. Reports on the Operations of the Great Trigonometrical Survey of India for 1866-67, 67-68, and 68-69. By the Superintendent.

27. Reports on the Topographical Survey of India for 1868-69, by Colonel Thuillier, Surveyor General of India. By Col. Thuillier.

28. Report on the Assessment of the Rahuri Taluka of the Ahmadnagar Collectorate. By Government.

29. Papers relating to Pilotage System of Bombay. By Government.

30. Report on the Sanitary State of the Island of Bombay, by Dr. Leith. By Government.

31. Annual Reports on the Jails in Sindh for 1864-65. By Government.

32. Annual Report on the Jails of the Bombay Presidency including Sindh and Aden for 1863. By Government.

33. Journal of a Tour of Inspection of the principal Jails in India, made by the Inspector General of Prisons, Bombay Presidency, in December 1862 and January and February 1863. By Government.

34. Statistical Report of the Colaba Agency. By Government.

35. Annual Reports on the Bombay Jails including Sindh and Aden, for 1864-65, 65-66 and 67-68. By Government.

MAP.

36. Map of the Kaṭhiáwáḍ Survey, Sheets Nos. 5, 6, 7, 8, 9, 12, 13, 15, and 16 with Index Chart.

By the Officer in Charge, Kaṭhiáwáḍ Party, G. T. Survey of India.

The Secretary remarked that of late he had made some efforts to increase the donations of books and maps to the Society, and to complete the sets of the Journals and Transactions of other Societies, by exchanges for completed sets of the Transactions of this Society, and he had, with a single exception, met with the most prompt and liberal responses. The result of this and of the application of a portion of the Premchand Roychand Donation for the purchase of books and maps was, that larger and more varied additions had been made to the library during the period he had held office than during any similar period of late years, and he yet expected still further additions. One pressing want now was a complete catalogue of the books and maps for the use of the members.

Letters read.—From the Hon'ble Mr. Justice Gibbs, President of the Society, regretting his inability to attend the meeting.

From the Collector of Kanaḍa, and the Commissioner in Sindh, with regard to returns for the Society's Index.

From the Superintendent Revenue Survey, relative to a loan of maps of the Puṇá Zilla for the Index of Towns and Villages.

From the Government of Bombay, instructing the Superintendent of the Photozincographic office to supply the Society with copies of such Revenue Survey maps as are now available, or may hereafter be so at his office.

To the Government of Bombay, requesting correct lists of the Dekhan Saranjams, Inam, and Isafat holdings.

To the Government of India, Home and Foreign Departments, the Governments of Bombay, Madras, Bengal, and the N. W. Provinces, requesting copies of such of the Selections from the Government Records as relate to geography, history, population and surveys.

The Secretary also read extracts from a letter he had received from Colonel Thuillier, Surveyor General of India, intimating his desire to be able to help the Society, and stating that the chief contributions from his office were made to the "Selections of the Government of India," published periodically from the statistical and geographical extracts of his annual administration reports. The operations of the survey are now extending rapidly all over India, and in the "Annals of Indian Administration in 1868-69," recently published, would be found a fair epitome of what is being done. He did not know if the Government of India supplied the Society with these numbers, and with their Selections, but they ought to do so. Further, he promised not to fail in making known the Secretary's request to all the officers of his department, in the hopes that it might stir up some of them to good deeds, and he would also refer the Secretary's note to Colonel Walker (Bombay Engineers) of the Trigonometrical Survey, and to Major Montgomerie of Kashmir and Trans-Himalayan celebrity, and see what could be done for the Society.

The Society was much pleased with Colonel Thuillier's expressions of willingness to afford assistance; and the Secretary was accordingly requested to convey to Colonel Thuillier the expression of its best thanks, and to avail himself of his kindness as he thought advisable.

The Secretary, in laying before the Society Part I. of Volume XIX. of the Transactions, (copies of which had already been sent to the

members), remarked that he had considered it advisable to issue the volumes in future in parts, rather than wait for more matter to complete a whole volume at once. This change, he observed, would be agreeable to the authors of papers, who would naturally be anxious to see their articles early in print, and it would bring the Society more frequently before the scientific world and the public. He hoped this arrangement would meet with the approval of the Society.

The Secretary stated further—"In January 1868, a plan of a proposed Index or List of Indian Geographical names was submitted to this Society, and approved of. In answer to a correspondence opened with Government relative to assistance procurable through the Revenue Officers, the Society was able to obtain valuable lists of the towns and villages in the different collectorates of the Bombay Presidency with information respecting the temples, jatras, &c. From other provinces no information has as yet been received, and though the Index has not been given up, the plan of it may possibly, from want of information, be considerably modified, and as the members of the Sub-Committee are perhaps unable to devote much time and attention to it, it cannot be got ready in any form worth publishing by a single individual in any limited period. I propose continuing to prepare a general Index, chiefly geographical and historical; and whilst it is in preparation, and because it will necessarily be of but limited extent, the lists obtained from the Bombay Government may, I think, be utilized in a series of Zilla lists, of which what I now lay before the Society is the first; those of Solapur, Satara and Ahmadnagar are also in hand. In the introductory remarks I have made full use of the Government reports on the Revenue Settlements of Máwal and Indapur, as they are not likely to attract notice in their original form."

Mr. Burgess then read the introductory account of the Puṇá Zillá.

Dr. Bhau Daji remarked that the Society must feel deeply indebted to Mr. Burgess for his zealous endeavours in its behalf and for the very interesting paper he had read, evincing so much careful research, and which must have cost him a great deal of labour to prepare.

The Rev. W. B. Keer remarked that while he thought they must all feel, as the Vice-President had observed, deeply indebted to Mr. Burgess for the pains-taking research which he had bestowed on his able and interesting paper, he was sure he was only expressing

what he had no doubt others felt, that it would afford them much pleasure if the Vice-President, Dr. Bhau Daji, himself, with his intimate knowledge of Indian antiquities and local geography, would favour them some day with a paper on some one or other of our less known districts or races.

The Annual General Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday the 24th November 1870, at 4½ P. M.

Present.—Captain G. T. Robinson, Senior *Vice-President*, in the chair; Dr. Bháu Dájí, G.G.M.C., Hon. M.R.A.S., *Vice-President;* The Hon'ble Sir Jamsetjee Jejeebhoy, Bart., F.R.G.S.; Captain J. E. C. Pryce, F.R.G.S.; Captain W. L. Searle, F.R.A.S.; J. Firth, Esq., F.R.G.S.; James Taylor, Esq.; Dhirajrám Dalpatrám, Esq., G.G.M.C.; R. G. Walton, Esq., C.E., F.R.G.S., F.A.S.L.; The Hon'ble Mr. Justice Bayley; The Rev. J. S. S. Robertson, F.R.G.S., M.R.A.S.; The Rev. W. B. Keer, Harbour Chaplain, A.C.F., Captain Henry Morland, F.R.A.S., F.R.G.S., members; and J. Burgess, Esq., F.R.G.S., M.R.A.S., *Honorary Secretary.*

Visitor.—W. H. Hamilton, Esq.

The Minutes of last Meeting were read and confirmed.

Election.—Janárdán Gopál, Esq., was elected a member under Rule XXII. of the Society.

Member proposed.—Captain John Dixon, proposed by Capt. Morland and seconded by Captain Pryce.

Several donations to the Library were announced, for which the best thanks of the Society were voted to the donors.

Letters read.—From the Librarian, University Library, Cam bridge; Librarian, Trinity College, Dublin; Superintendent, Roy Observatory, Greenwich; Librarian to the Lords Commissioners of t Admiralty; Secretary, P. & O. Steam Navigation Company; Lib rian, Glasgow College, acknowledging with thanks Vol. XIX. Par of the Society's Transactions.

From Joseph Henry, Esq., Secretary Smithsonian Institu Washington, and S. L. Abbot, Esq., Corresponding Secretary, Bc Society of Natural History, acknowledging with thanks Vol. XVII the Transactions, and transmitting several donations for the accep of the Society.

From Joseph Lovering, Esq., Corresponding Secretary, A can Academy of Arts and Sciences, forwarding Proceedings

American Academy in the hope of establishing an exchange, which was accepted, and a copy of the last volume was sent to his address.

4. From Colonel Jenkin Jones, R.E., and D. E. Gostling, Esq., resigning their membership of the Society.

5. From the Government of Madras forwarding eight copies of the Selections applied for by the Society. These were acknowledged with thanks and other numbers requested.

6. From the Government of India informing that copies of the Selections requested by the Society would be forwarded.

7. From the Government, N. W. Provinces, issuing instructions to favour the Society with copies of the Selections requested by them.

8. To the Secretary, Ceylon Branch, Royal Asiatic Society, requesting wanting numbers of the Journal of the Asiatic Society in exchange for such Volumes of the Transactions of this Society as may be required by him.

9. To the Bombay Government, bringing to their notice that enquiries were sometimes made at the Society's Rooms for maps and other local geographical and statistical information which had not been placed at their disposal, and requesting Government to issue instructions that the Society be favoured with one copy at least of all such maps hitherto printed or lithographed at the Photozincographic office at Poona and at the Chief Engineer's Office at Bombay as may still be available, and of all maps that may be printed or lithographed in future at either of these offices; stating also that the Collector of Bombay had for sale certain publications of which no copy had been sent to the Society, and requesting them to favour the Society with these.

10. To Colonel Thuillier, Surveyor General of India, informing that extracts from his private letter were read at the last Meeting of the Society, and requesting his Reports on the Topographical Survey of India, and copies of such other maps as he may be pleased to supply. These Reports were received and acknowledged with thanks.

11. Correspondence with the Bombay Government, the Alienation Settlement Officer, the Collectors of Sátárá and Ahmadnagar on the subject of the correct lists of the Dekhan Sarañjám, Inám and Isáfat villages and holdings, was also laid before the Society.

The business of the Monthly Meeting having been brought to a termination, that of the Annual Meeting was entered on, and the following gentlemen were declared, from the Voting Lists scrutinized by the Committee, to be the Office-bearers for the ensuing session 1870-71:—

Vice-Presidents.—Captain G. T. Robinson; Dr. Bháu Dájí, G.G.M.C., Hon. M.R.A.S.; and Captain G. F. Henry.

Resident Members of the Committee.—J. Burgess, Esq., F.R.G.S., M.R.A.S.; J. Connon, Esq., M.A.; Ráo Saheb Vishvanáth Náráyan Mandlik; The Hon'ble Sir Jamsetjee Jejeebhoy, Bart, F.R.G.S.; Captain J. E. C. Pryce, F.R.G.S.; Professor F. J. Candy, M.A.; James Taylor, Esq.; Manakjí Khursedji, Esq., F.R.G.S., F.R.S.N.A.; The Hon'ble Mangaldas Nathubhái; Kawasji Jehangir Readymoney, Esq., C.S.I.; A. C. Gumpert, Esq., and J. P. Leith, Esq.

Non-Resident Members.—General Sir G. LeGrand Jacob, K.C.S.I., and C.B.; Colonel Sir A. B. Kemball, K.C.S.I., C.B., F.R.G.S.; Dádábhái Naoroji, Esq.; H. E. Rear Admiral George St. Vincent King, C.B., R.N.; Major General H. J. Barr; Deputy Inspector General of Hospitals S. M. Pelly, C.B., F.R.C.S.; Major General T. Tapp, C.B., A.D.C. to the Queen; and W. Sowerby, Esq., C.E., F.G.S.

Mr. Burgess then submitted to the Society the following—

ANNUAL REPORT FOR 1869-70.

During the past session the Society met four times and the following communications were laid before it:—

1. Some account of the Navigation of the Narmadá, with Remarks on the Gulf of Khambay, by William Sowerby, Esq., C.E., F.G.S.

2. The towns, villages, &c. of the Puna Zillá, with Remarks and Notes, by J. Burgess, Esq., M.R.A.S., F.R.G.S., Honorary Secretary.

The number of Members on the roll of the Society at the last annual meeting was 141. Since then the following 7 gentlemen were added to the Membership:—Dastur Hoshung Jamasp; The Hon'ble Mr. Justice Gibbs, C.S.; The Right Rev. H. A. Douglas, D.D., Lord Bishop of Bombay; The Rev. J. S. S. Robertson, F.R.G.S., M.R.A.S.; Khurshedji Nushirwanji Kámá, Esq.; The Rev. W. B. Keer, S.P.G.; and Janárdan Gopál, Esq., making a total of 148 members. Against this the Society have lost 12 members, of whom there have been removed—

By retirement from India,—4.—The Hon'ble Sir D. F. McLeod, K.C.S.I., C.B.; G. C. M. Birdwood, Esq., M.D.; H. E. General Sir W. R. Mansfield, K.C.B., G.C.S.I.; and The Right Hon'ble Lord Napier of Magdala, K.C.B., G.C.S.I.

By resignation of Membership,—5.—R. S. Sinclair, Esq., LL.D.;

T. C. Hope, Esq., C.S.; Colonel Jenkin Jones, R.E., F.R.G.S.; Robert Knight, Esq.; and D. E. Gostling, Esq.

By Death,—3.—Náráyan Dinánáthji, Esq.; J. P. Hughlings, Esq., B.A., and Lieut. T. C. R. Carpendale, I.N.,—in all 12 members, leaving 136 members on the register of the Society at this date. Of these however only 69 are Resident, and 67 Non-Resident, of whom 36 are in Europe.

Dr. Birdwood joined the Society in the year 1859. In 1862 Mr. Kennelly, the then Secretary, intimated to the Society the urgency of their nominating a member to act jointly with him, as he could no longer unaided carry on the work as he could wish. Dr. Birdwood was accordingly elected Joint Secretary, which office he held for some time. His energetic labours in furthering many public objects in this city have been justly acknowledged by different sections of the community on the eve of his departure to Europe on account of failing health. In him the Society have lost an active member. The following contributions of his will be found in the 15th volume of the Transactions:—

1. Observations on the Bed and Delta of the Nile, read before the Society in October 1859.

2. Is the Habiah of Bruce the source of the White Nile? read before the Society in February 1860.

A meeting of the Committee of the Society was called in December last, for the election of a President in place of Lord Napier of Magdala retired. As the business however in the Committee meeting could not be proceeded with for want of a quorum, the sense of the general meeting was taken, and the members present unanimously concurred in the propriety of the Hon'ble Mr. Justice Gibbs, C. S., being nominated Lord Napier's successor. The proposal was accordingly circulated to the Committee, who approved of the selection, and Mr. Justice Gibbs accepted, at the invitation of the Society, the office of President.

Publication.—Part I. of Volume XIX. comprising the Society's Transactions for the years 1868 and 1869, was submitted to the Society at their last meeting. It has been considered advisable in future to issue the volumes in Parts, rather than wait for more matter to complete a whole volume at once. This plan of publication will be agreeable to contributors to the Transactions, who are naturally anxious to see their Papers early in print, and it will bring the Society more frequently before the scientific world and the public.

The second Part of Vol. XIX. is in the Press, and will now be proceeded with as rapidly as possible.

Catalogue.—The Society is in great need of a complete catalogue of its books and maps. Till 1859 no printed catalogue seems to have been thought of, and the first was printed under the superintendence of Mr. Kennelly in 1862. This was reprinted with additions in 1866, and bound up with the Index to the first 17 volumes of the Society's Transactions. From an examination of the list of purchases made during the earlier years of the Society's existence, it has been found that many valuable books had been lost when the first was prepared, and even since the last was printed there seem to have been several losses. This was discovered only a few months ago, and led to an examination of the record of the issues of books. It has been kept in a very imperfect and unsatisfactory way, and the Society's sanction is required for the expense of printing proper forms and the purchase of such books as may be necessary for keeping business-like records of additions to the Library, and the issues of books to Members; and along with this for the expense of printing a new catalogue, including all the recent purchases and additions. This will be all the more easily prepared now that lists have been drawn up of all the recent additions both of books and maps, and form an Appendix to this Report.

The ex-President's Portrait.—It is gratifying to record that the Portrait of W. E. Frere, Esq., our ex-President, subscribed for by the Society on his retirement from India in 1865, arrived early in the year, and was exhibited at the meeting held on the 21st April last, and has given every satisfaction as a faithful likeness. The total amount collected on this account was Rs. 1,665. The cost of the Portrait including freight, landing charges, &c. amounted to Rs. 1,298-15-1. From the balance a further disbursement has been made of Rs. 65 for varnishing the four Portraits, and covering the backs of the frames with canvas, and the balance of Rs. 301-0-11 is held as a fixed deposit for the general purposes of the Society.

The following resolutions were unanimously passed on the occasion of the reception of the Portrait:—

1. "That the thanks of the Bombay Geographical Society be tendered to Mr. Frere for the trouble he has taken in procuring his Portrait for their Rooms, and especially for the excellent choice he has made in selecting Mr. Dickinson as the artist by which the Society

become possessed of a picture admirably executed both as to the painting and the likeness. That the balance of the account be paid by the Secretary to Messrs. Forbes and Co."

2. "That the Secretary take measures for the cleaning and restoring the Portraits of Sir Charles Malcolm, Sir Alexander Burnes, and Captain Ross, and that when funds are available, new frames corresponding with that just received with Mr. Frere's Portrait be obtained."

The scheme of the Society for the preparation of an Anglo-Vernacular Index of Indian geographical names is being attempted, and the lists of towns, villages, &c., with particulars as regards temples, Jatrás, &c., called for in the Government Resolution have been furnished by the Collectors for the Bombay Presidency (exclusive of Sindh). It is however disappointing not to be able to report more progress in the Society's part of the work. All that has yet been completed is an alphabetical list of the towns, &c. of the Puná Zillá, with geographical and historical references connected therewith, which was submitted to the Society at last meeting. It embraces the following particulars:—Transliterated name of each town—Vernacular name—Vulgar spelling of the name—Tarf or Parganá, and Tálukás; population; latitude and longitude; with information respecting temples, Jatrás, fairs, architectural remains, markets, &c. List of the towns, &c. of the Sátárá, Solápur, and Ahmadnagar Zillás are in hand, but the progress made by the Clerk is so slow that the officiating Honorary Secretary had undertaken the last of these himself, and employed a young man for two months at his own expense to work at the preparation of materials, but other engagements have forced him to lay it aside for the present at least.

Improvement of the Library.—The most important feature in the proceedings of the last session was the improvement of the Library. Exchanges of the wanting numbers for completed sets of the Society's Transactions were proposed to the Asiatic and Geographical Societies of London and Paris, the Boston Society of Natural History, Asiatic Society of Bengal, and the Surveyor General of India, and it is most gratifying to state that the Society has met with the most prompt and liberal responses in the following instances:—

1. From the Royal Geographical Society of London:—Eight wanting parts of volumes 2, 3, 5 and 6 of the Proceedings.

2. The Royal Asiatic Society of Great Britain and Ireland informed this Society that the whole stock of the old series of their Journal was

now the property of Messrs. Trübner & Co., but transmitted to us—Two wanting volumes of the New Series. With Messrs. Trübner & Co., an exchange was effected for 11 odd volumes of the old series of the journal against a set of this Society's Transactions, with a balance of £6 6s. 6d. in our favour.

3. The Asiatic Society of Paris very promptly sent us—

12	volumes	wanting of the	3rd series	of the Journal Asiatique.	
5	Do.	Do.	4th	Do.	Do.
8	Do.	Do.	5th	Do.	and odd numbers of vol. 18.
12	Do.	Do.	6th	Do.	Do.

in all 37 volumes, in return for which this Society was requested to supply copies of 6 volumes of the Transactions, which has been done.

4. From the Boston Society of Natural History we have received—five volumes wanting of the Journal; and four volumes of its Proceedings, and wanting parts of volumes 9 and 10 of the Proceedings.

No replies have been received from the Geographical Society of Paris or the Asiatic Society of Bengal.

The Government of Bombay was applied to by the Society for wanting numbers of the "Selections from the Records of Government." 10 numbers were supplied, viz., Nos. 7, 26, 80, 90, 95, 98, 100, 103 109, and 112, but Nos. 2, 4, 5, 16, 32, 44, 49, 55, 56, 61, 64, 110, and 113 were not available, of these Nos. 44 and 49 have been purchased.

From the Surveyor General of India the Society received, in exchange for a complete series of the Transactions, 42 maps bound in book form as per separate list.

The Bombay Government was also addressed to favour the Society with copies of such Maps as are now available, or might hereafter be so from the Photozincographic office at Puna. The Government of India in the Home and Foreign Departments, the Government of Madras, the Government of Bengal, and the Government of the N. W. Provinces, were also applied to supply the Society with copies of such of the "Selections from the Government Records" as related to Geography, History, Population and Surveys. The following have been received:—1. From the Government of Madras—11 volumes of the "Selections from the Government Records," as per list. 2. From the Government of the N. W. Provinces—Part I of Vol. IV. of the Selections. 3. From the Government of India, Home Department—4 volumes of the Selections, as per list.

At the last annual meeting, the Society accorded its permission to appropriate the sum of Rs. 1,000 from the Premchand Raichand Donation for making accessions to the Library. Of this sum Rs. 844-2-8 has been spent, and there have been purchased 7 maps and 68 volumes of books as per list appended.

Non-Resident Members.—It is a matter of extreme regret to be compelled to advert to the indifference shown by some of the Non-Resident Members to repeated calls for the recovery of their subscriptions. The arrears due to the Society under this head amount to about Rs. 1,277. The amount realized on account of the subscriptions of the 66 Resident Members and the Government contribution of Rs. 600 per annum is found inadequate to the requirements of the Society. This, it is hoped, the members, who take a real interest in the Society, will consider and attempt to remedy. Many have it in their power to assist the Society by obtaining additional members from among their friends and acquaintances. If every member would do his best in this way, the Society would be greatly benefited, and might work with renewed vigour.

It will be for the Society to consider the amount of subscription to be asked from Non-resident members who have not access to the Library or meetings.

We have hitherto been exceedingly indulgent to members leaving Bombay, and have for years been sending them copies of our Transactions free of cost, and without requiring them to pay any subscription. This seems to be a drain on the funds of the Society, scarcely called for: we cannot doubt but old members retiring to Europe would most readily contribute to the support of the Society, if only asked to do so. Nor can we doubt but members going to Europe for a year or two would also willingly continue to pay a small subscription. Our full subscription is among the smallest required by any scientific Society, and with the recent additions to the Library and the further extensions which a moderate increase in the membership would enable the Society to make, it may be reasonably hoped that every member will find that he has in that alone a full equivalent for his subscription. Non-resident members in the Transactions of the Society have the use of an organ through which they can publish the results of their geographical and other allied enquiries without expense, and with the certainty of its being sent to all similar Societies in the world: and themselves receive in it the information contributed by others;

moreover, if the efforts recently made, and which, it is hoped, will be still further prosecuted, in trying to interest the many able and intelligent officers of the Trigonometrical and Topographical Surveys in India, in the work of the Society, and to obtain contributions from their stores of information, the Transactions of this Society will be specially valuable. Its publication is necessarily expensive to the Society; and it is therefore but reasonable to expect that all Non-Resident Members will readily pay a small annual subscription which the Committee will consider and arrange. For some years past at least the Society has been almost solely dependent for the supply of books to the presents of individuals and Government and the exchange of publications with kindred societies. Thanks to the kindness of Mr. Khurshedji Fardunji Párakh and of Mr. Premchand Raichand, the Society has within the last few years obtained a varied and valuable collection of books connected with geographical science, and among other means of rendering the Society useful not the least influential may be the regular addition of new works to the Library. It is somewhat deficient in what ought to be a special feature of every Geographical Library—copies of the larger collections of voyages,—we have Kerr's and Harris's collections and the Letters Edifiantes, but wanting Pinkerton, Hakluyt, Purchas, Churchill, Astley, Pelham, Laharpe and Sir R. Phillips' collections, Dalrymple's Memoirs and Tracts—many of them relating to India,—and the works of Tieffenthaler and Linchoten. Any of these would be acceptable presents from members who may possess copies. But small as the income of the Society is, something might be done in the following way towards purchases:—

With our present membership the income from Resident Members may be estimated at about	Rs.	960
From Government	„	600
If to this we can add from Non-Resident Members	„	240
The total income will be	Rs.	1,800
The Establishment ought not to exceed half the income—say	Rs.	850
Printing, Postage, &c.	„	650
	Rs.	1,500

leaving a balance of Rs. 300 available for [illegible] otherwise at the disposal of the Soci[illegible]

however, is dependent upon the realization of subscriptions from non-residents.

Whatever balance may be available might perhaps be best employed in the first place in the formation of a reserve fund, the interest of which would be a most important aid to the Society. A few years ago the income rose considerably in excess of the expenditure then incurred; of late we have been drawing on the balance of former accounts; and besides this the Society appropriated for its ordinary use a balance of Rs. 1,093-4-6 of the Bhagwandas Purshotamdas Donation and Rs. 1,000 of the Premchand Raichand Donation, against which it disbursed Rs. 594-5-2 to meet the deficiency of the Sorabji Pestonji Framji Donation, leaving a supplement to its regular income from these sources alone of Rs. 1,498-15-4, the greater part of which has been expended nearly a year ago. In May 1869 the cash balance at the credit of the general fund amounted to Rs. 756-4-4; the total income for the year from every source amounted to Rs. 1,034-8-4, and the current expenditure to Rs. 1,483-1-3, or about Rs. 350 in excess of the income. This is a most unsatisfactory state of matters, which it was found necessary to put a stop to. We have still an unexpended balance of Mr. Premchand Raichand's donation amounting to ... ... Rs. 2,617 2 5

And other monies belonging to the Society ... „ 961 13 8

Amounting in all to ... ... Rs. 3,579 0 1

The interest of this sum, which is invested in Bank fixed deposits at 5 per cent and 6 per cent, amounts to about Rs. 180 per annum, and should any such balance accrue to the Society as has been previously referred to, the whole ought to be added to this investment until the Rs. 1,000 first appropriated from the Premchand Raichand Donation at least had been recouped, or even the whole Rs. 1,498-15-4 above alluded to, after which two-thirds of it should be added, and one-third retained, if necessary, to be expended along with the interest of the fund on the purchase of books. Further, when the interest of the fund should reach Rs. 250 per annum, the whole of the yearly balance might thereafter be added, and not less than Rs. 200, or than half the interest, when it exceeded Rs. 400 should be available for the purchase of books and maps, and the rest for the general purposes of the Society. This position might, I think, be attained by strict economy in about four years, or if we should be so fortunate as to receive any special

donations, even sooner. Had the balance of the donations already referred to only been invested, as they ought to have been, in this way, the interest would now have been upwards of Rs. 230 per annum.

Again, I think, three-fourths of all amounts paid by Life Members ought to be permanently invested in behalf of the general expenses of the Society. Some such scheme would place the Society in a safe financial position.

Full accounts of the disbursements on account of the different donation funds are appended.

A.—MAPS RECEIVED FROM THE SURVEYOR GENERAL OF INDIA.

1. Ajmir and Mairwara Districts, 1850.
2. Akyab District, 1853-1861.
3. Bakarganj District, 1860-1863.
4. Behar District, 1840-44.
5. Bengal, Behar and Orissa, 1868.
6. Bogara District, 1852-1856.
7. Bhutan, with the Bengal Duars, illustrating the Route of the Mission in 1864.
8. British Burmah, Pegu Division, 1862.
9. Route Survey from India into Great Tibet.
10. British Sikhim, comprising the Darjiling Hill Territory and two Morang Parganas, 1852.
11. Independent Sikhim, 1850.
12. The Eastern British Frontier bordering on Burmah and Manipur, 1869.
13. Central Asia, 1866.
14. Central Provinces, with the adjoining British and Native States, 1865.
15. China Coast and rough sketch of the Provinces between Canton and Pekin, 1859.
16. Chittagong District, 1835 to 1841 and 1861-66.
17. Chota Nagpur, Sheet No. 20, 1868.
18. Dhaka and Furidpur Districts, 1357 to 1860.
19. City, Suburbs and Cantonments of Gorakhpur, 1828.
20. Map to illustrate the operations of the Hazara Field Force, 1868.
21. Hushangábád District, 1862 to 1867.
22. Hand Map of India, 1869.
23. India, Political and Revenue Divisions, 1869.
24. Index to the G. Trig. Survey of India.
25. Index to the Districts and Divisions of India, 1868.
26. Jabhalpur District, 1854 to 1862.
27. Plan of Jagannáth, 1849.
28. Plan of the Town and Fort of Kalinjar, 1868.
29. Photozincographed Sections of Part of the Su[illegible] and Baltistán, or Little Tibet, 1[illegible]
30. Khairpur Territory of H. H. M[illegible]

31. Muhammad Khan's Tanda District—Taluka Guni, 1866-67.
32. Malda District, 1853.
33. Naushera District, Sindh, 1860 to 1863.
34. Panjab, sheet No. 1 containing Hazara, Yusufzir, Peshawar and part of Afghanistan, 1867.
35. Peshawar Districts, M. C. Nos. 1-9.
36. Rajputana and the adjacent Countries, 1846.
37. Rangpur District, including Kooch Behar, 1856 to 1860.
38. Ságar and Narmadá Territories, 1861.
39. Districts Jacobabad, Shikarpur, Rohri, Larkhana, and Mehur, comprising the Shikarpur Collectorate, Upper Sindh, 1856 to 1862.
40. Sindh—sheets Nos. 1-11, 13, 18, and 19.
41. Sironcha and Bastar Districts, 1863.
42. Sohágpur and Rámgadh districts of Gundwana,—Ságar and Narmadá Territories, 1842.
43. Tenaserim and the adjacent Provinces of Siam, 1868.
44. Turkistan with adjoining portions of the British and Russian Territories, 1868.

B.—FROM THE MADRAS GOVERNMENT.

1. Papers on the General Revenue Survey of the Madras Presidency, 1858.
2. Papers on the Survey and Settlement of the Chellumbrum and Manargoody Talooks, South Arkat District, 1869.
3. Report on the Revenue Survey, 1855.
4. Report of the Annamullay Forests, 1857.
5. Navigation of the Godáverí, 1856.
6. Report on the Pumban Channel, 1854.
7. A Collection and Precis about Jaipur, 1864.
8. Papers on the General Revenue Survey of the Madras Presidency, 1863.
9. Papers on the Reduction of Assessment in North Arkat, 1857.
10. Proposed Plan for the Revenue Assessment of Kurnool, 1843.
11. Collections of Decrees on the mutual rights of Land-holders and Tenants in Malabar, 1858.

C.—FROM THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

1. The Andaman Islands; with Notes on Barren Island, 1859.
2. Reports on the Survey of the Mineral Deposits in Kumaon, and the Iron Smelting Operations at Dechouree, 1856.
3. Report on the Metalliferous Deposits of Kumaon and Gurhwal, 1855.
4. Supplement to Selections No. 8, Papers regarding the Forests and Iron Mines in Kumaon, 1855.

D.—BOOKS AND MAPS PURCHASED ON ACCOUNT OF THE PREMCHAND RAICHAND DONATION.

1. The Tuhfat-ul-Majahindin; a History of the First Settlement of the Mohammedans in Malabar, and of their subsequent Struggles with the Portuguese, translated from the Arabic, by Lieut. M. Rowlandson, 8vo, 1833.

2. Yakkun Nattannawa, a Cingalese Poem, descriptive of the Ceylon System of Demonology; to which is appended, the Practices of a Capua, or Devil Priest, as described by a Budhist; and Kolan Nattannawa, a Cingalese Poem, descriptive of the characters assumed by Natives of Ceylon in a Masquerade, illustrated with plates from Cingalese designs, translated by J. Callaway, 8vo, 1829.
3. Histoire de la Vie de Hiouen-Thsang, et de ses Voyages dans l'Inde 629-645, traduite du Chinois, par Julien, 8vo. *Paris*, 1853.
4. Kitab-i-Yamini; Historical Memoirs of Early Conquerors of Hindustan, and Founders of the Ghaznavide Dynasty, translated from the Persian, by the Rev. James Reynolds, B. A., 8vo, 1858.
5. Oriental Tracts; a Collection of Pamphlets relating to India, China, and other Oriental Countries.
6. Transactions of the Royal Asiatic Society, 3 Vols.
7. Burnes's Kábul: being a Narrative of a Journey to, and Residence in that city in 1836-38. 8vo. *London*, 1842.
8. Chamich's (Father M.) History of Armania from B. C. 2247 to A. D. 1780, translated with continuation by J. Avdall, 2 vols. 8vo. *Calcutta*, 1827.
9. India in the Fifteenth Century; containing Abd-er-Razzak's Narrative of My Voyage into Hindustan, 1442; Couti's Travels in the East; Athanasius Nikitin's Travels to India; and Stefano's Journey from Cairo to India, 1499. Edited by R. H. Major, 8vo. (Hakluyt Society's vol. XXII) 1857.
10. Leyden's Memoirs of Zehir-ed-din Muhammed Babar, 4to. *London*, 1826.
11. Customs and Manners of the Women of Persia, and their Domestic Superstitions, translated from the Persian by J. Atkinson, 8vo, 1832.
12. Boileau's Narrative of a Tour in the Western States of Rajwara in 1835. 4to. *Calcutta*, 1837.
13. Hugel's Travels in Kashmir and the Panjab, with Notes by Major Jervis, 8vo. *London*, 1845.
14. Recueil de voyages et de Memoires publié par la Société de Geographie, 4 vols. 4to, *Paris*, 1824.
15. Geographie D'Edrisi traduite de l'Arabe par P. Am. Jaubert, 2 vols. 4to. *Paris*, 1836.
16. Macarius, Patriarch of Antioch, Travels of, written by his Archdeacon, Paul of Aleppo, translated by F. C. Balfour, M.A., 2 vols. 4to, 1829-37.
17. Reinaud's Fragments Arabes et Persans inedits relalifs a L'Inde, 8vo. *Paris*, 1845.
18. The Geographical Works of Sadik Isfahani; and a Critical Essay on Various Works, Arabic and Persian, translated by J. C., from Persian MSS. in the Collection of Sir W. Ouseley, 8vo, 1832.
19. A Description of the Burmese Empire; compiled chiefly from Native Documents, by the Rev. Father Sangermano; and translated from his MS. by W. Tandy, 4to, 1834.
20. Troyer's Radjatarangini Histoire des Rois du Kachmir traduite et commentée, 2 vols. 8vo. *Paris*, 1840.

21. A. Keith Johnston's Dictionary of Geography, Descriptive, Physical, Statistical, and Historical, 8vo. *London*, 1868.
22. Beal's Travels of Fah-Hian and Sung-Yun, Buddist Pilgrims, 12mo. *London*, 1869.
23. Smithsonian Contributions to Knowledge, Vols. X. and XIII., 4to. *Washington*, 1858-63.
24. Smithsonian Miscellaneous Collections, 5 vols. 8vo. *Washington*, 1862-64.
25. Crawfurd's Descriptive Dictionary of the Indian Islands and adjacent Countries, 8vo. *London*, 1856.
26. Heber's Narrative of a Journey through the Upper Provinces of India, 1824-25, 2 vols. 12mo. *London*, 1861.
27. Eastwick's Hand-Book for India, 2 vols. 12mo. *London*, 1859.
28. Bholanáth Chandar's Travels of a Hindu to various parts of Bengal and Upper India, with introduction by J. T. Wheeler, 2 vols. 8vo. *London*, 1869.
29. Wilson's Ariana Antiqua.—A Descriptive account of the Antiquities and Coins of Afghanistan, with a Memoir on the Buildings called Topes, by C. Mason, 4to. *London*, 1841.
30. Rennell's Memoir of a Map of Hindustan or the Mogal Empire, 3rd Ed. 4to. *London*, 1793.
31. Tod's Travels in Western India, 4to. *London*, 1839.
32. Binning's Journal of Two Years' Travels in Persia, Ceylon, &c., 2 vols. 8vo. *London*, 1857.
33. Buckingham's Travels in Assyria, Media and Persia, 2 vols. 8vo. *London*, 1830.
34. Hooker's Himalayan Journals, 2 vols. 8vo. *London*, 1854.
35. Mrs. Postan's Kachh: or Random Sketches in Western India, 8vo. *London*, 1839.
36. Malcolm's Memoir of Central India, 2 vols. 8vo. *London*, 1824.
37. Wood's Narrative of a Journey to the Source of the Oxus by the Route of the Indus, Kabul, &c. in 1836-38, 8vo. *London*, 1841.
38. Butler's Travels and Adventures in Assam during a residence of fourteen years, 8vo. *London*, 1854.
39. Walker's Tables of Heights in Sindh, the Panjab, N. W. Provinces and Central India, determined by the survey of India to May 1862, 8vo. *Calcutta*, 1863.
40. Moorcroft's Travels in the Himalayan Provinces and the Panjab, by H. H. Wilson, 2 vols. 8vo. *London*, 1841.
41. Burnes's Travels into Bokhara; also Narrative of a Voyage on the Indus in 1831-33, vol. II. 8vo. *London*, 1834.
42. Thornton's Gazetteer of the Territories under the East India Company and the Native States, 8vo. *London*, 1861.
43. Account of Kunáwar by the late Captain A. Gerard, edited by G. Lloyd, 8vo. *London*, 1841.
44. Elliot's Memoirs on the History and Folklore of the Races of the North Western Provinces of India; re-arranged by J. Beames, 2 vols. 8vo. *London*, 1869.

45. Elliot's History of India as told by its own Historians—The Muhammadan Period, by Prof. J. Dowson, 2 vols. 8vo. *London*, 1867.
46. The Travels of Sir John Chardin into Persia and the East Indies. 4to. *London*, 1686.

MAPS.

1. Bengal, Bahar, Oudh and Alláhábád, with part of Agrá and Delhi, by J. Rennell. *London*, 1841.
2. Bengal and Bahar in 8 Parts, with Index, by J. Rennell, 1779.
3. India subdivided into Collectorates, and including the Tenaserim Provinces, with the Position and Boundary of each Native State, by J. Walker.
4. India from the 19th Degree of North Latitude to Cape Comorin, by J. Wyld.
5. The Environs of Madras surveyed in 1814, by W. Fadan, 1816.
6. Persia, Ancient and Modern, by J. Wyld, 1851.
7. Grand Trigonometrical Survey Maps of India, Nos. 118 and 119.

Remarks.

In conclusion, Mr. Burgess remarked, "one word for myself: at the meeting of this Society held on the 15th April 1869, you were pleased to nominate me your Acting Secretary for six months. During that time I acted within the limits that might be allowed to a substitute, but after it had expired, and I had no information as to Captain Morland's return, I took the liberty of assuming the full powers of his office in corresponding with other Societies, and with the various Local Governments in India on behalf of the Society, and also in commencing work which I am happy to find his return now will enable him to take up and complete. The projected catalogue was to be on the same plan as that of the Royal Geographical Society with additional double entries. It will involve a good deal of labour on Captain Morland's part, but doubtless his zeal for the Society will enable to execute it well. The various accounts have been adjusted to the end of October, and I shall be happy to complete the number of the Transactions now in the press, so that he may begin the next part himself. And now it only remains to me to resign my office to the Society in behalf of your former Honorary Secretary Captain Morland, who has expressed to me his readiness to resume the office."

Annual Statement of Receipts and Disbursements *on account of the* Bombay Geographical Society, *from* 1*st May* 1867 *to* 30*th April* 1868.

Receipts.

1867.					Rs.	A.	P.
May 1st	To Balance on this date, viz. :—						
	In the hands of the Treasurers	Rs. 9,904	5	1			
	Ditto of the Secretary	„ 301	9	2			
					10,205	14	3
	„ Government Subscription for 12 months.....				600	0	0
	„ Annual Subscriptions from Members, viz.:—						
	On account of 1862-63	Rs. 15	0	0			
	Ditto of 1863-64	„ 15	0	0			
	Ditto of 1864-65	„ 30	0	0			
	Ditto of 1865-66	„ 60	0	0			
	Ditto of 1866-67	„ 420	0	0			
	Ditto of 1867-68	„ 750	0	0			
	Ditto of 1868-69	„ 240	0	0			
					1,530	0	0
	„ Amount recovered on account of the "Speke Memorial" Fund				50	0	0
	„ Interest from Messrs. Remington & Co., at 2 per cent				189	14	10
	Total...Rupees				12,575	13	1

Expenditure.

1868.					Rs.	A.	P.
April 30th	By Office Establishment.....				1,168	0	0
	„ Clothing to Peons, Postage, and other Contingencies..				85	9	4
	„ Printing 200 copies of the Society's Rules and Regulations, Bill Books, Circulars, &c.....				113	0	0
	„ Amount remitted to Society's Agent, London, being payment in full as follows :—						
	Balance on account of Bhagwándás Purshotamdás grant for Index, &c.	Rs. 906	11	6			
	Balance of the Sorabji Pestonji Framji grant for reprint of Vol. VI...	„ 1,094	5	2			
	Charges for a set of the Transactions bound and presented to D. J. Kennelly, Esq.....	„ 152	15	5			
					2,154	0	1
	„ Amount expended in the purchase of Maps on account of the Premchand Raichand grant				538	10	11
	„ Amount paid for a Book-case on account of the Kharsetji Fardunji Parakh grant for books				125	0	0
	„ Amount remitted to W. E. Frere, Esq., being part payment on account of his Portrait.....				1,054	15	1
	„ Ditto to the Secretary to the Royal Geographical Society of London, being subscriptions collected on account of the "Speke Memorial" Fund				280	0	0
	„ Commission to Messrs. Remington & Co., and petty charges				34	11	1
	Carried over.....Rs.				5,553	14	6

				Rs. A. P.
	Brought forward.....			5,553 14 6
1868. April 30th	By Balance on this date, viz. :—			
	In the hands of the Treasurers.....Rs.	6,886 14 9		
	Ditto of the Secretary, viz :—			
	General Cash Balance Rs.	59 15 10		
	On account of Frere Portrait Fund ..... „	65 0 0		
	Do. Speke Memorial Fund ..... „	10 0 0		
			134 15 10	7,021 14 7
			Total...Rupees	12,575 13 1

Bombay, 1*st May* 1868.

Examined and found Correct.
J. BURGESS,
Auditor.

Errors excepted,
HENRY MORLAND,
Honorary Secretary to the Society.

Annual Statement of RECEIPTS AND DISBURSEMENTS *on account of the* BOMBAY GEOGRAPHICAL SOCIETY, *from* 1*st May* 1868, *to* 30*th April* 1869.

RECEIPTS.

Cr.				Rs. A. P.
1868 May 1st	To Balance on this date, viz. :—			
	In the hands of the Treasurers.....Rs.	6,886 14 9		
	„ Ditto of the Secretary ..... „	134 15 10		
				7,021 14 7
	„ Subscription from the Bombay Government for 12 months			600 0 0
	„ Annual subscriptions from members, viz. :—			
	On account of 1865-66.....Rs.	15 0 0		
	Ditto 1866-67..... „	60 0 0		
	Ditto 1867-68..... ..... „	75 0 0		
	Ditto 1868-69..... „	615 0 0		
	Ditto 1869-70..... „	120 0 0		
				885 0 0
	„ Amount realized by the sale of the Society's Transactions			90 0 0
	„ Interest from Messrs. Remington & Co., Treasurers, at 2 per cent			134 11 8
			Total...Rupees	8,731 10 3

EXPENDITURE.

Dr. 1869					Rs.	A.	P.
April 30th	By Office Establishment				1,188	0	0
	„ Subscription to the "Times of India," charges on account of Printing, Office Contingencies, purchase of Books, &c				294	4	10
	„ Amount paid to the Superintendent, Bombay Education Society's Press, for printing 300 copies of Vol. XVIII. of the Society's Transactions				2,252	8	0
	„ Ditto do. on account of Binding Work				54	0	0
	„ Amount remitted to Messrs. Smith, Elder & Co., in liquidation of their account made up to the end of June 1868				83	5	10
	„ Commission to Messrs. Remington & Co., Treasurers, and petty charges				21	13	3
				Rupees	3,893	15	11
	„ Balance on this date, viz :—						
	In the hands of the Treasurers	4,609	15	4			
	„ Ditto of the Secretary, viz :—						
	General Cash Balance	152	11	0			
	„ Ditto on account of the W. E. Frere Portrait Fund	65	0	0			
	„ Ditto Speke Memorial Fund	10	0	0			
		227	11	0			
					4,837	10	4
				Total...Rupees	8,731	10	3

Bombay, 1*st May* 1869.

Examined and found correct,

ATMARAM PANDURANG,

Auditor.

Errors Excepted,

J. BURGESS,

Offg. Honorary Secretary to the Society.

Statement of RECEIPTS AND DISBURSEMENTS *of the* BOMBAY GEOGRAPHICAL SOCIETY, *for the year* 1869-70.

RECEIPTS.

Dr. 1869					
May 1st	To Balance on this date, viz :—				
	„ With Messrs. Remington & Co. as follows :—				
	Society's money ....Rs.	603	9	4	
	„ On account of the Frere Portrait Fund „	545	0	11	
	„ Do. the Premchand Raichand Fund „	3,461	5	1	
	Carried over.....Rs.	4,609	15	4	

		Rs.	A.	P.	Rs.	A.	P.
1869	Brought forward.....	4,609	15	4			
May 1st	With the Secretary, viz.—						
	Society's money ..... Rs.	152	11	0			
	On account of the Frere Portait Fund. „	65	0	0			
	Ditto Speke Memorial Fund..... „	10	0	0			
		227	11	0			
					4,837	10	4
	To Government Subscription				600	0	0
	„ Subscription from Members, viz :—						
	On account of 1865-66 .....Rs.	15	0	0			
	Ditto 1866-67 ..... „	60	0	0			
	Ditto 1867-68 ..... „	75	0	0			
	Ditto 1868-69 ..... „	105	0	0			
	Ditto 1869-70 ..... „	600	0	0			
					855	0	0
	„ Cash received by sale of Transactions				83	8	0
	„ Ditto for Postage on a copy of Transactions				0	8	0
	„ Interest, viz :—						
	From Messrs. Remington & Co. ...Rs.	104	5	4			
	Less commission charged by them. „	12	9	0			
	Rs.	91	12	4			
June 30th	From the Mercantile Bank of India, London and China..... „	3	12	0	95	8	4
	Total...Rupees				6,472	2	8

EXPENDITURE.

Cr.		Rs.	A.	P.
1870 April 30th	By Office Establishment	1,188	0	0
	„ Cash remitted to London Agent per Messrs. Remington & Co. for Books £79-16-7 costing.....	839	11	8
	„ Ditto paid Superintendent, Bombay Education Society's Press for binding books	67	2	0
	„ Ditto Manager of the "Times of India" on account of subscription to paper	80	0	0
	„ Printing and advertising charges	50	8	0
	„ Stationery, contingencies, &c	100	5	3
	„ Cash disbursed on account of the "W. E. Frere Portrait"	244	0	0
	„ A Stamped Cheque Book	1	9	0
	Rupees	2,571	3	11

„ Balance on this date, viz :—				
„ General account with Messrs. Remington & Co.....Rs.	137	0	0	
„ Ditto the Mercantile Bank of India, London & China ..... „	269	2	0	
„ Ditto the Secretary ..... „	5	11	9	
Carried over.....Rs.	411	13	9	

		Rs. A. P.	
1870 April 30th	Brought forward	411 13 9	
	Fixed Deposits, viz :—		
	Amount due 26th July 1870 (Frere Portrait Fund) .....Rs.	610 0 11	
	Do. Do. 25th January 1871 (Premchand Raichand account) ..... „	2,617 2 5	
	Do. Do. Do. (general account) ..... „	261 13 8	3,900 14 9
	Total...Rupees		6,472 2 8

Bombay, 30*th April* 1870.

Examined.
J. FIRTH,
DHIRAJRAM DALPATRAM,
Joint Auditors.

Errors Excepted,
J. BURGESS,
Offg. Honorary Secretary to the Society

Statement of RECEIPTS AND DISBURSEMENTS, *of the* BOMBAY GEOGRAPHICAL SOCIETY, *from* 1*st May to* 31*st Oct.* 1870.

RECEIPTS.

Dr. 1870			Rs. A. P.
May 1st	To Balance on this date, viz :—		
	With Messrs. Remington & Co.....Rs.	137 0 0	
	Ditto the Mercantile Bank of India, London and China ..... „	269 2 0	
	Ditto the Secretary ..... „	5 11 9	
	Fixed Deposits, viz :—		
	Amount due 26th July 1870 (Frere Portrait Fund) ..... „	610 0 11	
	Ditto 25th January 1871 (Premchand Raichand account) ..... „	2,617 2 5	
	Ditto Do. Do. (general account)..... „	261 13 8	3,900 14 9
	„ Government contribution		300 0 0
	„ Subscription from Members, viz :—		
	On account of arrears 1866-67.....Rs.	15 0 0	
	Ditto 1868-69..... „	30 0 0	
	Ditto 1869-70..... „	90 0 0	
	Ditto 1870-71..... „	615 0 0	
	Ditto Life Membership ..... „	100 0 0	850 0 0
	„ Interest, viz :—		
	30th June 1870, from the Mercantile Bank of India, London and China...Rs.	15 4 0	
	26th July 1870, Do. Do..... „	1 2 0	16 0 0
	Total...Rupees		5,067 4 9

EXPENDITURE.

Cr. 1870					Rs.	A.	P.
October 31st	By Office Establishment				564	0	0
"	" Cash paid Mr. Sykes for repairing certain Portraits				65	0	0
"	" Printing and advertising charges				23	8	0
	" Contingencies				23	2	0
	" Commission charged by Messrs. Remington & Co. ....Rs.	45	3	10			
	Less Interest allowed by them ..... "	43	12	0	1	7	10
				Rupees	677	1	10
	" Balance on this date, viz :—						
	Current Cash Balance at the Mercantile Bank ....Rs.	810	1	1			
	With the Secretary ..... "	1	1	9			
	" Fixed Deposits, viz :—						
	Amount bearing interest at 6 per cent per annum due 25th Jan. 1871 (the Premchand Raichand account) "	2,617	2	5			
	Do. Do. (general account)... "	261	13	8			
	Do. at 5 cent. due 26th July 1871 (including balance from the W. E. Frere Portrait Fund) ..... "	700	0	0			
					4,390	2	11
				Total...Rupees	5,087	14	9

Bombay, 31*st October* 1870.

Examined.
J. FIRTH,
DHIRAJRAM DALPUTRAM,
Joint Auditors.

Errors Excepted,
J. BURGESS,
Offg. Honorary Secretary to the Society.

THE PREMCHAND RAICHAND *Donation account.*

RECEIPT.

Dr. 1865		Rs.	A.	P.
January 11th	To amount of the Premchand Raichand Donation for the purchase of maps, charts, &c.	5,000	0	0
	Total...Rupees	5,000	0	0

EXPENDITURE.

Cr. 1867		Rs.	A.	P.
June 4th	By amount paid Education Society's Press for Map of Kathiawar	12	0	0
	" Ditto for 22 Trigonometrical Survey Maps of India.	198	0	0
August 16th	" Ditto do. for 10 ditto	90	0	0
	Carried over..... ..Rs.	300	0	0

					Rs.	A.	P.
1868		Brought forward.....			300	0	0
Sept. 26th	By Cash reserved for the general purposes of the Society as per Resolution of this date.....				1,000	0	0
Feb. 20th	„ Cash paid for a copy of Pharoah's Gazetteer of Southern India with Atlas.....				10	0	0
April 4th	„ Ditto remitted to London Agent for 46 sheets of Trigonometrical Survey Maps of India bound				228	10	11
1869							
July 26th	„ Ditto to ditto for Books £30 stg. costing .....Rs.	315	9	10			
October 22nd	„ Ditto do. £30 stg. do..... „	313	0	8			
1870							
January 14th	„ Ditto do. £17 3s. 3d. stg. do ..... „	182	5	0			
March 26th	„ Ditto do. £2 13s. 4d. stg. do ..... „	28	12	2			
	Sundry expenses ..... „	4	7	0			
					844	2	8
April 30th	„ Unexpended Balance on hand of Rs. 1,000 set apart for Books, &c...Rs.	155	13	4			
	„ Balance in fixed deposit with the Mercantile Bank .... „	2,461	5	1			
					2,617	2	5
				Total...Rupees	5,000	0	0

THE SORABJI PESTONJI FRAMJI *Donation account.*

RECEIPTS.

Dr.

		Rs.	A.	P.
1865				
January 31st	To amount of the Sorabji Pestonji Framji Donation for reprint of Vol. VI of the Bombay Geographical Society's Transactions.	1,000	0	0
	„ Balance met out of the Society's general cash	594	5	2
	Total...Rupees	1,594	5	2

EXPENDITURE.

Cr.

		Rs.	A.	P.
1867				
June 21st	By amount remitted to Agent in London for reprint of vol. VI., as per invoice	1,594	5	2
	Total...Rupees	1,594	5	2

The Bhagwandas Purshotamdas *Donation account.*

Receipt.

Dr.		Rs.	A.	P.
1865				
March 17	To amount of the Bhagwandas Purshotamdas Donation for compiling an Index to the first 17 volumes of the Society's Transactions	3,500	0	
	Total...Rupees	3,500	0	

Expenditure.

Cr.		Rs.	A.	
1865				
May 26th	By amount remitted to London Agent in a bill for £145 6s. 3d. costing	1,500	0	
1867				
June „	„ Ditto do. for £85 19s. costing	906	11	
	Rupees	2,406	11	
Sept. 26th	„ Balance transferred to the General Funds of the Society as per Resolution passed at their Meeting held this day	1,093	4	
	Total...Rupees	3,500	0	

The W. E. Frere *Portrait Fund account.*

Receipts.

Dr.		Rs.	A.	P
1866				
August 14th	To amount of Subscriptions collected on account of the Frere Portrait Fund	1,665	0	(
	Total...Rupees	1,665	0	0

Expenditure.

		Rs.	A.	P
1867				
June 21st	By Cash remitted to W. E. Frere, Esq., in a bill for £100 costing	1,054	15	]
1870				
April 29th	„ Ditto paid Messrs. Forbes & Co., being balance of cost on account of the Portrait, £22 1s. 3d	232	12	(
	„ Ditto on account of Landing charges, &c	11	4	(
October 11th	„ Ditto paid Mr. Sykes for repairing certain Portraits.	65	0	(
„ 31st	„ Balance due to this account absorbed in general cash account	301	0	11
	Total...Rupees	1,665	0	(

Particulars of FIXED DEPOSITS *with the Mercantile Bank of India, London, and China.*

Dr. 1870				Rs. A. P.
October 31st	To amount bearing interest at 6 per cent. per annum due 25th January 1871	Rs.	2,279 0 1	
	Do. do.	,,	600 0 0	
	Do. at 5 per cent. due 26th July 1871	,,	700 0 0	
				3,579 0 1

Cr. 1870				Rs. A. P.
October 31st	By Balance of the Premchand Raichand Donation account	Rs.	2,617 2 5	
	,, Do. the W. E. Frere Portrait Fund	,,	301 0 11	
	,, Society's money	,,	660 12 9	
				3,579 0 1

Errors Excepted.

J. BURGESS, F.R.G.S.,
Offg. Honorary Secretary, Bombay Geographical Society.

SESSION 1871-72.

FIRST MEETING, *July 27th*, 1871.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday the 27th July 1871, at half-past 4 P.M.

Present.—The Honourable Mr. Justice Gibbs, C.S., *President*, in the Chair; Bháu Dájí, Esq., G.G.M.C., Honorary M.R.A.S., *Vice-President;* Commander G. T. Robinson, late I.N., *Vice-President;* Máṇíkjí Kharsetjí, Esq., F.R.G.S., F.R.S.N.A.; Atmárám Pánḍurang, Esq., G.G.M.C.; J. M. Maclean, Esq.; Lieutenant W. L. Searle, late I.N., F.R.A.S.; J. Burgess, Esq., F.R.G.S., M.R.A.S.; Prof. F. J. Candy, M.A.; Barjorjí Sorábjí Ashburner, Esq.; J. Firth, Esq., F.R.G.S.; Dhirajrám Dalpatrám, Esq., G.G.M.C.; R. G. Walton, Esq., C.E., F.R.G.S., F.A.S.L.; W. Sowerby, Esq., C.E., F.G.S.; L. Reid, Esq., C.S.; The Rev. J. S. S. Robertson, M.A., F.R.G.S., M.R.A.S., *Members;* and Lieutenant Henry Morland, late I.N., F.R.G.S., F.R.A.S., *Honorary Secretary.*

Visitors.—Dr. Thomas Blaney; G. R. Vencatacooboo Moodliar, Esq.; and Jehángirjí Máṇíkjí Kharsetjí, Esq.

The Minutes of the last Meeting having been read and confirmed, Captain Morland read the following Resolutions from the Minutes of a Meeting of the Committee held on the 30th March last:—

1. Resolved that the subscription for Non-Resident Members be fixed at Rs. 5 per annum, and to have retrospective effect: and that they be informed and charged accordingly.

2. Resolved that copies of the Index to the first seventeen volumes of the Transactions, combined with Catalogues of Books and Maps, be forwarded to all the Resident Members who have not already received them, and that extra copies of the same be issued to new Members, and to those requiring second copy, at the rate of Rs. 6 per copy.

3. Resolved that Rs. 800 from the Premchand Raichand Donation be appropriated for the publication of a Supplementary Catalogue, to be labelled with the donor's name.

4. Resolved that the Native Princes and Chiefs of the Dakhan and Gujarát be invited to be Life Members of the Society.

5. Resolved that the Clerk to the Society be restored to his former salary up to 1st June next, with retrospective effect.

6. Resolved, also, that Messrs. Firth and Dhirajrám Dalpatrám be requested to audit the Society's cash accounts for last year.

Elections.—Rámkrishṇa Gopáḷ Bhánḍárkar, Esq., M.A.; Vináyakráo Rámchandraji, Esq.; Thomas Ormiston, Esq., C.E., M.I.C.E., and Captain John Dixon.

Members proposed.—F. B. Girdlestone, Esq.; T. W. Wood, Esq., and Kharsetjí Máṇíkjí Kharsetji, Esq., B.A., Oxford.

Captain Morland then remarked that he had applied to the Bombay Government for the Society being favoured with one spare copy of all the publications which were lying unused in the Marine Stores at H.M.'s Dockyard, and that he had met with a liberal response. Among the numerous Donations laid on the table, there were 74 works on miscellaneous subjects sent by the Marine Storekeeper, in conformity with the Government Resolution sanctioning their issue. There were also 62 works received from the Government of India, Home and Foreign Departments; the Government of Madrás; the Government of the N. W. Provinces, and other literary and scientific institutions of the world. He added that the Surveyor General of India had also, with his usual kindness, forwarded, for the acceptance of the Society, 65 Maps in exchange for the complete set of the Transactions already furnished to him. He then laid before them the following Donations, received since the last Meeting:—

FROM THE GOVERNMENT OF BOMBAY, THROUGH THE MARINE STOREKEEPER.

1. Marsden's Malayan Dictionary, 1812.
2. Marsden's Malayan Grammar, 1812.
3. Shakespear's Hindustáni and English Dictionary, 1820.
4. Shakespear's Grammar of the Hindustáni Language, 1826.
5. Roebuck's English and Hindustáni Naval Dictionary of Technical Terms and Sea Phrases, 1813.
6. Hopkins's Vocabulary, Persian, Arabic, and English, 1810.
7. Judson's Dictionary of the Berman Language, with explanations in English, 1826.
8. Piddington's Horn-Book of Storms for the Indian and China Seas, 1844.
9. Do. do. do. 1860.
10. Birt's Hand-Book of the Law of Storms, 1856.
11. Practical Rules for ascertaining and applying the Deviation of the Compass caused by the Iron in a Ship, 1856.
12. Biddlecombe's Naval Tactics and Trials of Sailing, illustrated by Diagrams, 1850.
13. Turkish Grammar compiled for the use of Travellers, 1834.
14. Arabic Grammar compiled for the use of Travellers, 1834.
15. Richardson's Grammar of the Arabic Language, 1811.
16. Sir William Jones's Grammar of the Persian Language, 1828.
17. Hough's Burman Grammar and Vocabulary, 1826.
18. Norie's Sailing Directions for the Coasts of Spain and Portugal, from Cape Ortegal to Gibraltar, revised by J. S. Hobbs, 1858.
19. Selby's Directions for approaching Bombay.
20. Griffith's Observations on some points of Seamanship, with Practical Hints on Naval Œconomy, 1828.
21. Orchard's Improved Method of raising Sunken Ships as adopted in the instance of the Barque "Roslin Castle," September 24th, 1856.
22. Fitzgerald's Memorandum of the Operations for removing the Wreck of the "Equitable" in the Fultah Reach of the Hugli, 1840.
23. Taylor's Memoir to accompany the Chart of the Arabian Sea.
24. General Description and Sailing Directions for the Coast of Káṭhiawáḍ, 1855.
25. The Seaman's Guide round Java, &c., by Baron Melvill of Carnbee, 1862.
26. Horsburgh's India Directory, or Directions for sailing to and from the East Indies and China., &c., 1852.
27. The Australian Directory, Vol. I., by J. Burdwood, 1855.
28. The West Coast of Hindustán Pilot, including the Gulf of Manar, the Maldivh, and Lakadivh Islands, by Captain A. D. Taylor, 1866.
29. The China Pilot, by J. W. King, 1861.
30. Johnson's Deviation of the Compass, 2nd ed., 1847 to 1852.
31. Reid's Law of Storms, 2 Parts, 1849, 1850.
32. Jean's Rules for finding the Names and Positions of all the Stars of the First and Second Magnitude, 1844.

33. Loggan's Latitude and Course Corrector, with many useful Improvements in Navigation, 1851.
34. The Mercantile Navy List, and annual appendage to the Commercial Code of Signals for all Nations, by J. H. Brown, 1857.
35. Gordon's Lunar and Time Tables adapted to new, short, and accurate methods for finding the Longitude by Chronometers and Lunar Distances, 1849.
36. Owen's Tables of Latitudes and Longitudes by Chronometers of Places in the Atlantic and Indian Oceans, &c., 1827.
37. Galbraith's Mathematical and Astronomical Tables, &c., 1834.
38. Hutton's Logarithm Tables, 1858.
39. Weston's Tables for finding the Longitude by Chronometer at Sunrise and Sunset, 1849.
40. Tide Tables for the British and Irish Ports, 1863.
41. The Marine Steam Engine, designed chiefly for the use of Naval Officers and Engineers, 1849.
42. Instructions by Major General Sir John Malcolm to Officers acting under his orders in Central India in 1821-1824.
43. Penal Articles for the government of the several Officers of the Marine, 1824.
44. An Attempt to elucidate the Principles of Malayan Orthography, by W. Robinson, 1823.
45. Shakespear's Hindustáni Selections, 2 Parts, 1825.
46. Forest Reports of the Bombay Presidency for the years 1849-50—1855-56.
47. Extracts from the Holy Writ and various Authors, intended as Helps to Meditation and Prayer, principally for the Army and Navy, by Captain Sir N. J. Willoughby.
48. Roebuck's Collection of Proverbial Phrases in the Persian and Hindustáni Languages, 1824.
49. Report on Public Instruction in the Bombay Presidency for 1859-60.
50. Reports received from H. M.'s Secretaries of Embassy and Legation respecting Coal, to which is added an Appendix as to Coal in the British Colonies and India, 1868.

SELECTIONS FROM THE RECORDS OF THE GOVERNMENT OF INDIA, FOREIGN DEPARTMENT.

51. Report on the Pegu Teak Forests (No. 31), 1861.
52. Report on the Altaran Forests (No. 32), 1861.
53. Progress Report of the Forests of the Tenaserim and Martaban Provinces for 1858-59, 1859-60 (No. 29), 1861.

SELECTIONS, GOVERNMENT OF BENGAL.

54. Report on the Teak Forests of the Tenaserim Provinces, by H. Falconer (No. 9), 1852.
55. Notes on the Manufacture of Salt in the Tamluk Agency, &c. (No. 13), 1853.
56. Papers relative to the Katak Rivers, 2 Parts (No. 35), 1860.

PUBLICATIONS BY THE HAKLUYT SOCIETY.

57. Cathay and the Way thither; being a Collection of Medieval Notices of China, &c., translated and edited by Col. H. Yule; 2 vols., 1866.
58. Galvano's Discovery of the World, edited by Vice-Admiral Bethune, 1862.
59. The Three Voyages of Martin Frobisher in search of a Passage to Cathaia and India by the North-West, A. D. 1576-8, by Rear-Admiral Richard Collinson, 1867.
60. The Fifth Letter of Hernan Cortes to the Emperor Charles V., containing an Account of his Expedition to Honduras, translated by Don Pascual de Gayangos, 1868.
61. Narrative of Pascual de Andagoya, translated by C. R. Markham, 1865.
62. First Part of the Royal Commentaries of the Yncas, by Ynca Garcilasso de la Vega, translated by C. R. Markham; Vol. I., 1869.
63. The Life and Acts of Don Alonzo Enriquez de Guzman, A. D. 1518 to 1543, translated by C. R. Markham, 1862.
64. The Travels of Ludovico di Varthema in Egypt, Syria, Arabia, Persia, India, and Ethiopia, A. D. 1503 to 1508, translated by J. W. Jones, and edited by G. P. Badger, 1863.
65. The Travels of Pedro de Cieza de Leon, A. D. 1532-50, translated by C. R. Markham, 1864.
66. A Description of the Coasts of East Africa and Malabar, by Duarte Barbosa, translated by the Honourable H. E. J. Stanley, 1866.
67. The Three Voyages of Vasco de Gama, and his Viceroyalty, translated by the Honourable H. E. J. Stanley, 1869.
68. The Wonders of the East, by Friar Jordanus, translated by Colonel H. Yule, 1863.
69. India in the Fifteenth Century, edited by R. H. Major, 1857.
70. The Philippine Islands, Moluccas, Siam, Cambodia, Japan, and China at the close of the Sixteenth Century, by Antonio de Morga, translated by the Honourable H. E. J. Stanley, 1868.

FROM THE BOMBAY GOVERNMENT, THROUGH DIFFERENT DEPARTMENTS.

71. General Report on the Administration of the Bombay Presidency for 1869-70.
72. Annual Statement of the Trade and Navigation of the Province of Sindh for 1869-70.
73. Reports of Cases decided in the High Court of Bombay, Vol. VII., Part II.
74. Tide Tables for the Ports of Bombay and Karáchi, 1871.

FROM THE GOVERNMENT OF INDIA, THROUGH VARIOUS DEPARTMENTS.

75. General Report on the Operations of the Great Trigonometrical Survey of India for 1869-70, by Colonel Walker, Superintendent.
76. General Report on the Topographical Survey of India for the season of 1869-70, by Colonel Thuillier, Surveyor General of India.

77. Report on the Trans-Himálayan Explorations in connection with the Great Trigonometrical Survey of India during 1869, by Major Montgomerie.

Selections:—

78. Papers on the Coal of the Narmadá Valley, Tenaserim Provinces, 1856.
79. Report upon the present Condition and future Prospects of Tea Cultivation in the North-West Provinces and in the Panjáb, 1857.
80. Selections from Reports of the Trigonometrical, Topographical, and Revenue Surveys for 1867-68, 1868-69, and 1869.
81. Report on the Altaran Forests for 1860.
82. Report on the Settlement of the Siam and Tenaserim Boundary, by Lieut. Bagge, 1866.
83. Annual Report of the Munipore Political Agency for 1868-69, by Dr. Brown.
84. Journal of the Salween Surveying Expedition during the season of 1864-65.
85. Journal and Report of the Karennee Mission, 1865.
86. Political History of the State of Jaipur, 1868.
87. Official Narrative of the Expedition to explore the Trade Routes to China *viâ* Bhambo, under the guidance of Major Sladen, 1870.
88. Progress Report of the Forests of the Tenaserim and Martaban Provinces for 1858-59, 1859-60.
89. Report on the Bastar and Kharonde Dependencies of the Raipur District, 1861.
90. Survey of the River Gogra; Road over the Tounghoop Pass; Report on the Cotton Fields of Pegu, 1854.
91. Reports on the Geography of the Province of Pegu, and on the working of the Topographical Suvey, &c., 1856.
92. Papers regarding the Jabhalpur School of Industry, Flax Operations in the Panjáb, &c., 1856.
93. Report on the Gáikaváḍ's Hospital; Notices on Kareen Nei, &c., 1858.
94. Reports on the Teak Forests of Pegu for the years 1856, 1857-58, and 1858-59.
95. Report on the Settlement of the Peshawar District, 1865.
96. A Narrative of the Russian Military Expedition to Khiva under General Perofski in 1839.
97. Memoirs of the Geological Survey of India. *Palæontologia Indica.* Vol. III., Nos. 1 to 8.
98. Memoirs of the Geological Survey of India, Vol. VII., Parts 1 and 3.
99. Records of the Geological Survey of India, Vol. III., Parts 1, 2, and 4.

FROM THE MADRAS GOVERNMENT.

Selections:—

100. Papers relating to the Survey and Settlement of the Western Delta Taluks of the Godávari District, 1870.
101. Notes on and Extracts from the Government Records in Fort St. George Public Department; Letters from England from 1670 to 1677.

FROM THE GOVERNMENT OF THE NORTH-WEST PROVINCES.

102. Selections from the Records of Government, Vol. IV., Part 2.

THROUGH THE AMERICAN GEOGRAPHICAL AND STATISTICAL SOCIETY.

103. Journal of the American Geographical and Statistical Society, Vol. II., Part 2.
104. Annual Report of the Adjutant General of the State of New York, Vol. I.
105. First and Second Reports of the Special Committee appointed by the Executive Board of N. Y. State Agricultural Society on the Statistics, Pathology, and Treatment of the Epizoötic Disease known as the Rinderpest.
106. Manual for the use of the Legislature of the State of New York, 1870.
107. Annual Reports of the Trustees of the Cooper Union for the Advancement of Science and Art for 1864, 1866, and 1869.
108. The Twenty-fifth Annual Report of the New York Association for Improving the Condition of the Poor, for the year 1868.
109. State Rights; a Photograph from the Ruins of Ancient Greece, &c.
110. Legislative Honours to the memory of President Lincoln, 1865.
111. Rules and Regulations of the Greenwood Cemetery, &c., 1870.
112. Annual Report of the General Agent for the Relief of Sick and Wounded Soldiers of the State of New York, 1865.
113. Charter of the City of Albany as amended by the Legislature of 1870.
114. Annual Message of the Governor of the State of New York, 1870.
115. Railroads to the Pacific Northern Route; its general character, relative merits, &c., by E. F. Johnson, C.E., 1854.
116. Introductory Report of the Commissioner of Patents for 1863.
117. Compound Comminuted Gunshot Fractures of the Thigh, and Means for their Transportations, &c, by Dr. J. Swinburne.
118. Report of the Chamber of Commerce for 1869-70. Presented by the Chamber.
119. Guide to Mineral Springs of Italy, by G. Jervis. By the Author.
120. Archives of the Ethnological Society of Florence, Vol. I., Part I. By the Society.
121. Annual Report of the Convict Settlement of Port Blair for the year 1869-70. By the Government of India.
122. First Annual Report upon the Geology and Mineralogy of the State of New Hampshire, by C. H. Hitchcock. By the Author.
123. Reports of the Geographical Society of Italy for October and November 1870. By the Society.
124. The Indian Economist, the Statistical Reporter, and the Agricultural Gazette of India, for February, March, April, and June 1871. By the Government of India.
125. Gazetteer for the Haidarábád Assigned Districts, commonly called Berar, 1870. By the Resident at Haidarábád.
126. Proceedings of the Royal Geographical Society of London, Vol. XIV., Nos. 3, 4, 5; Vol. XV., No. 1. By the Society.

127. Journal of the Royal Asiatic Society of Great Britain and Ireland, New Series. Vol. V., Part I. By the Society.
128. Journal of the Asiatic Society of Paris, No. 58, for May and June 1870. By the Society.
129. Notes on Kaira, a District in Fertile Gujarat, by Javherilál Umiáshankar Yajnik. By the Author.
130. Report on the Schools of the Sir Jamsetjee Jejeebhoy Pársi Benevolent Institution for 1869-70. By the Trustees.
131. "Nature," a Weekly Illustrated Journal of Science; Nos. 48 to 60. By J. N. Lockyer, Esq.
132. Nautical Magazine and Naval Chronicle, Nos. for November and December 1870, and January to June 1871. By purchase.

FROM THE SURVEYOR GENERAL OF INDIA.—MAPS.

1. Abbotábád Cantonments and Environs, 1868-69.
2. Agrá Cantonments, City and Environs, 1868-69; 6 sheets.
3. Agrá, country round.
4. Akyab Cantonments, Town and Suburbs, 1853-54.
5. Alláhábád Cantonments, City and Environs, 1867-68; 6 sheets.
6. Alwar, Plan of the Fort and City of, 1868-69.
7. Amballa Cantonments, City and Environs, 1867-68; 6 sheets.
8. Amballa, Dehli, and Hissar Divisions, 1868.
9. Amritsar Cantonments and Environs, 1868-69; 2 sheets.
10. Amritsar Division, Skeleton Map of.
11. Atlas Sheets.
12. Attok Fort and Environs, 1868-69.
13. Audh, compiled from the latest Survey.
14. Banu and Derá Ishmael Khán Districts, with the Kabul Kheyl and Mahsud Wazeri Hills. Upper Derahjat. 1856-61.
15. Bharatpur City, Fort, and Environs, 1857-58.
16. Bundi, in Rajputana, Plan of the City and Environs of, 1869-70.
17. Calcutta, the City and Environs of, including the Government Estate of Panchannogram, &c., 1852 to 1866.
18. Central India Agency, Sketch Map of the, 1868.
19. China Coast and Rough Sketch of the Provinces lying between Canton and Pekiń.
20. Constantinople and India, Sketch Map showing the Routes between, 1867.
21. Damoh District, 1863 to 1866.
22. Delhi Cantonments, City and Environs, 1867-68.
23. Deoli, in Rajputana, Cantonments of, 1868.
24. Derá Ghází Khán District. Lower Derahjat. 1856-59.
25. Dinápur Cantonment and Environs, 1863-64.
26. Ferozpur Cantonment and Environs, 1868-69.
27. Ganges and Ráví, the Sub-Himálayan between the Rivers.
28. Hazara District.

29. Himálaya Mountains and adjacent Plains, Topographical Survey of part of the.
30. Hushangábád District, 1862 to 1867.
31. India, Sketch Map of, illustrating the Lines of Telegraph, 1870.
32. India, Countries on the North-West Frontier of.
33. India (Northern), Sheets Nos. 3, 4, and 7.
34. Jaipur, in Rájputana, Plan of the City and Environs of. 1865.
35. Jalandhar Cantonment and Environs, 1868-69.
36. Jalandhar, Hoshyàrpur and Kangra: the Trans-Sutluj Division, comprising the Districts of; 1847 to 1852.
37. Jhánsí City, 1858-59.
38. Jhelam and Ráwal Pindi Districts, with portions of Sháhpur, Leia, and Hazara.
39. Kánhpur Cantonment, Civil Station, City, and Environs, 1867-68.
40. Káshmir, Ladak, and Baltistán, or Little Tibet, Photozincographed Sections of part of the Survey of.
41. Kota, in Rájputana, Plan of the City and Environs of. 1869-70.
42. Láhur, Plan of the City and Environs of, showing the Civil Station of Anarkalli and the Cantonment of Mian Mir, 1868.
43. Láhur Division, comprising the Districts of Gurdaspur, Amritsar, Láhur, Sialkot, Gujranwala, 1850-55.
44. Lakhnau Cantonments.
45. Lakhnau City and Environs, 1862-66.
46. Multán Division, comprising the Districts of Gugaira, Jhang, Multán, and Muzzaffargharh, &c., 1853-58.
47. Nágpur District, 1858-60.
48. Nágpur City, 1865.
49. Naushera Cantonment, Town and Environs, 1866-67.
50. Narsinghpur District, 1862-63.
51. Panjáb and its Dependencies, with portions of the North-West Provinces and Afghanistan, 1870.
52. Panjáb, Sheets Nos. 1 to 8.
53. Peshawar Cantonment, City and Environs, 1866-67.
54. Poona, Plan of the City of.
55. Rewá, Plan of the City of.
56. Rohrí, Sakkar, and Fort Bakar, Plan of, surveyed in 1856.
57. Ságar District, 1854-64.
58. Sháhpur and Gujarát Districts, 1853-59.
59. Sialkot Cantonment and Environs, 1868-69.
60. Simlá, Plan of.
61. Sitabaldi, Fort and Civil Station of, surveyed in 1865-67.
62. Srinagar, or City of Káshmir and Environs.
63. Tea Localities in the Panjáb and North-West Provinces, 1862.
64. Tenaserim and the adjacent Provinces of the Kingdom of Siam, compiled by Lieut. Bagge. 1868.
65. Tonk, in Rájputana, City and Environs of, 1868-69.

The attention of the Society was also drawn to the last instalment of books received on account of the Premchand Raichand donation.

Among the several letters laid on the table, there was a long correspondence between this Society and the different Governments of India, and other literary institutions, on the subject of the varied accessions to the Library noticed above.

The Honourable the *President* called upon Mr. Sowerby to read his paper "On Tides and their Action—geologically and geographically considered"—announced for the evening.

The *Prcsident* then invited discussion on the various points raised by Mr. Sowerby.

Mr. Burgess said the paper was a most suggestive one and raised many points which would require careful consideration to put them in order so as to be made intelligible. Mr. Sowerby had held that there were twelve nodes of propagation for tides in each hemisphere, and that they were to some extent equidistantly situated. Something of this kind might perhaps be the case if the land were equally distributed and perfectly symmetrical, and also distributed in certain forms with relation to the sea. But these nodes could be accounted for by the tidal currents quite as well as that they were the origin of the tides, and if Mr. Sowerby would study the matter a little further he would probably find that that was the case. Airey points out that these nodes must take place under certain circumstances. Another point raised was altogether a new one—that of land tides—and the question asked by Mr. Sowerby was, Is the world a lunatic? Some years since, Sir William Thompson, of Glasgow, one of the ablest mathematicians and physicists of the day, started the question as to the degree of rigidity of the earth and how far it had effect upon tides; and by calculations from existing observations it was found that the earth was more rigid than glass. That a globe of glass of the same size as the earth would not present a more inelastic object to the attraction of gravitation than the earth itself had been shown by extensive and careful observations. The question now to be settled, and for which, if he mistook not, a grant was made by the British Association for its furtherance, was, how much more rigid than glass is the earth? That could only be investigated by observations much more delicate than any that had yet been made, and which must be

taken at points carefully selected, some near the Poles and some near the Equator. Then Mr. Sowerby's illustration of the ship on the tides as the "card and shilling trick" did not, he thought, exactly represent the case. If the tide in mid-ocean were a wave of translation, then the illustration would be correct, and the ship would simply be left by the tide moving at the rate of a thousand miles an hour, if it were not able to give it the necessary impulse, which it would do if, as Mr. Sowerby said, the ship were fastened to it. The tidal wave, however, was not one of translation, but of transmission, and that being the case the vessel receives but a very slight impulse, and he did not see how it would be possible for mariners to take advantage of that motion, considering its slight effect under the most favourable circumstances. It would take him some hours to put his ideas into a proper shape to set before an audience who had not previously studied the matter, and who were not aware of the principles upon which tides were calculated. Mr. Sowerby's paper, however, contained many points well worthy of consideration, and he trusted it would be found valuable when it appeared in its published form. He trusted Mr. Sowerby would take these points into consideration, and either make out his theory to be correct, if possible, or modify it in accordance with the results already arrived at.

Mr. Sowerby said that with regard to the action of the tides he had gone very carefully through Whewell, and the latest publication of Keith Johnston, and he could form no possible conclusion from them. Indeed, he had never seen a more imperfect explanation of the theory of tides. Whewell makes the tide commence near South Australia, and says that in two days it reaches the north of Europe. With regard to the tides he had said in his paper that in mid-ocean it was a tide of transmission, and that not until it approached the coast did it become a tide of translation, and that only in the latter case were ships carried along with it.

Mr. Burgess said he must have misunderstood Mr. Sowerby. It was the card and shilling explanation that struck him, and he held that that illustration was not applicable to the case, for the wave did not fly through and leave the ship, as the card flew from under the shilling, but gave it a rising motion, and when the wave of transmission had gone past, the ship would again sink to her former level. The

sending of the card from below the shilling was a matter of translation, and not of transmission; but if the card was forced a little so as to bend it upwards and raise the shilling, then it would be an illustration of transmission.

Mr. Sowerby said he believed he had pointed out in his paper that the ship would be sent slightly forward.

Mr. Burgess said the illustration was misleading, and was apt to make one imagine that the water slides through in a certain way, leaving the ship where it was, as the card slides through below the shilling. When the water was shallow the wave was gradually changed into one of translation, carrying the ship on with it. If the ocean were uniformly of great depth there would be no translation anywhere; and in a depth, say, of five thousand fathoms, where the rise is only eighteen inches, as the amount of water required to give the rise extended through the whole depth and was not on the surface, the amount of forward propulsion must be an almost infinitesimal quantity. In the Gulf of Cambay it became a wave of translation, and the ship would get the full force of it and be carried on to the rocks. The card and shilling would in that case go along together.

Captain Morland referred to Mr. Sowerby's remarks on Sion Creek, and said that the question as to whether Bombay harbour could be restored to its original depth on the western foreshore by re-opening the creek was one of vast importance and well worth taking into consideration; but as to the Elphinstone works he did not see how they could possibly tend to silt up the foreshore. The subsidence of the sea in the Gulf of Kachh had been a matter of inquiry for some time past, and papers on the subject had been read before the Society two years ago, but what it was owing to was as yet undetermined, and many careful observations would have to be made before the question was finally settled. Of course the action of the tide on the shore was to a great extent governed by the formation of the shore, and in the Gulf of Cambay it was found that in some parts the sea had encroached upon the land, and in others the land had encroached upon the sea. Whether the wave becomes one of translation in 50 fathoms was open to question. The change from transmission to translation was caused by the action of the water being impeded by friction on the bottom, which, as was well known, was the cause of surf all along the coast. He understood Mr. Sowerby to say that if the present breakwater at Karáchi is

continued, and if it be true that the tide flows from the south-west, the tide would have to pass round the breakwater to enter Karáchi harbour. That, he believed, was a mistake. The breakwater was formed off the south-western side of the harbour, and to the northward of the bar, and on the western side of the entrance: consequently the tide must flow straight up Karáchi harbour. With regard to the charts of Bombay harbour, it was an acknowledged fact that the Admiralty charts were quite insufficient for engineering purposes, and there were no contour charts with tidal lines. It was originally surveyed on a large scale—four inches to a mile—but the chart had been reduced by the Admiralty authorities to one inch to a mile, and was consequently, except for navigation, quite inefficient. It would have been a good thing if Mr. Sowerby, when alluding to the groin for the reclamation of the South-West Prongs, had given a little information as to the time it would take to accomplish the reclamation.

Mr. Sowerby replied that the process of reclamation would be very speedy indeed.

The *President* said there was one thing in which he thought they would all agree, and that was that their thanks were due to Mr. Sowerby for his very suggestive paper, and the interesting conversation to which it had led. It had in truth been a most suggestive paper; for as Mr. Sowerby read on, he (the President) went back nearly twenty years of his life to follow him in some parts of his description of Gujarat and Sindh. Nothing had struck him as more true than Mr. Sowerby's observation that they ought to be very careful in putting forward their theories, since it was generally the case that those who did so, often lived to find out on further investigation that their theories were entirely wrong. One of the pet theories of the last fifty years with regard to Sindh and the Panjáb had been what route Alexander took when he came from his conquests there to take shipping in the Indian Ocean. A few days ago he was reading General Cunningham's book on this subject, and he found that the Director General of the Antiquarian Survey of India had formed the same opinions from papers and surveys as he himself had formed from going all over the ground many years ago. After describing the many changes that had taken place in Sindh during his recollection, the President concluded by saying: "I am sure we are all very much obliged to Mr. Sowerby, and should be glad if he and other members will favour us with other papers. Since the old Indian Navy, with its scientific officers, has been removed

from us, the Society has not been favoured with so many papers; but I trust that now, when so many surveys are going on for irrigation purposes, harbour works, and other objects, for the superintendence of which very able officers have been selected, this Society will not in the future find itself in want of papers, but will rather suffer on the other side by having too many. I beg to propose a vote of thanks to Mr. Sowerby for the able and suggestive paper he has just read."

Captain Morland seconded the proposition, which was put to the meeting and carried unanimously.

The meeting terminated with a vote of thanks to the President.

SESSION 1871-72.

SECOND MEETING, *August 17th*, 1871.

THE ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 17th August, at 5 P.M.

Present—The Hon'ble Mr. Justice Gibbs, C.S., *President*, in the chair; Bháu Dáji, Esq., G.G.M.C., Hon. M. R. A. S., Vice-President; Mánakji Kharsetji, Esq., F.R.G.S., F.R.S.N.A.; J. Burgess, Esq., F.R.G.S., M.R.A.S.; Professor F. J. Candy, M.A.; Barjorji Sorábji Ashburner, Esq.; J. Macfarlane, Esq.; Náráyan Vásudeoji, Esq.; the Rev. J. S. S. Robertson, M.A., F.R.G.S., M.R.A.S., Members: and Captain Henry Morland, F.R.G.S., F.R.A.S., *Honorary Secretary*.

Visitors.—The Hon'ble Mr. Justice West, C.S.; Jehángirji Mánakji Kharsetji, Esq.; and S. A. Gliddon, Esq.

In reading the minutes of the last Meeting, Captain Morland observed that there was a little oversight with regard to Resolution No. 3 passed at the Meeting of the Committee held on the 30th of March last, authorising the appropriation of Rs. 800 from the Premchand Ráichand grant for the publication of a supplementary catalogue of the Library. He added that it was needless to recal the memory of the Society to the munificent donation of Mr. Bhagwándás Purshotamdas, who in 1865 placed at their disposal the sum of Rs. 3,500 for the publication of a general index to the first seventeen volumes of the Transactions, combined with a catalogue of the books, maps, &c. The sum of Rs. 2,406-11-6 had been disbursed in connection with the said publication, and the object of the donor having thus been carried out, the balance of Rs. 1,093-4-6 was, by a resolution of the Society, dated

the 26th September 1867, transferred to the general account of the Society. In justice, however, to Mr. Bhagwándás Purshotamdás it would, he thought, be advisable that the expenses required for printing the new catalogue be defrayed out of the balance appropriated from the grant, and that copies of the printed catalogue be labelled with the name of Mr. Bhagwándás.

The sense of the Meeting having been taken, the members present unanimously concurred in the propriety of Captain Morland's suggestion, and confirmed the minutes of the last Meeting with the exception of Resolution, No. 3, alluded to above.

Elections.—F. B. Girdlestone, Esq.; T. W. Wood, Esq.; and Kharsetji Mánakji Kharsetji, Esq., B.A., Oxford, who were duly proposed and seconded at the last Meeting, were, after ballot, declared members of the Society.

The following donations to the Library were announced, for which the best thanks of the Society were voted to the donors:—

DONATIONS.

1. Bulletin of the Geographical Society of Paris, Nos. for July to December 1870 and January and February 1871.—Presented by the Society.
2. Nautical Magazine, No. 7, for July 1871.—Subscribed for by the Society.
3. Bombay High Court Reports, Vol. VII., Part 3.—By Government.
4. Selections from the Records of Government, North-Western Provinces, Vol. IV., Nos. 3 and 4.—By the Government, N. W. Provinces.
5. General Report on the Revenue Survey Operations of the Bengal Presidency Upper and Lower Circles, for the season 1869-70.—By the Government of India.
6. Copy of the Edinburgh Evening Courant, 11th July 1871, containing announcement of the death of Dr. Keith Johnston.

Letters from the Secretaries to the Government of Bombay and the North-Western Provinces, forwarding donations for the Library, were also read.

The Hon'ble the *President* then remarked that, before the business of the Meeting was entered on, he would wish to impress on the members the urgent necessity of inviting the attention of Government to take into consideration the claims of this Society to better accommodation on the upper floor of the Town Hall than they enjoyed at present, on the removal of the Government Central Museum and the Agri-Horticultural Society to the Victoria and Albert Museum building, which was approaching completion. He expatiated at considerable length on the most undesirable situation of the Room

they at present occupied, with very defective means for light, ventilation, and the preservation of valuable manuscripts, books, maps, and charts, &c., which sustained injury in consequence of dampness, and moved the following resolution, which was seconded by J. Burgess, Esq., and unanimously carried:—

"That His Excellency the Patron be requested to take into consideration the claims of the Bombay Geographical Society to better accommodation in the Town Hall than it occupies at present, and that on the approaching move of the Museum and Agri-Horticultural Society's establishment to the Victoria Gardens and Museum, a room on the upper floor of the Town Hall, as before, be placed at the Society's disposal."

Captain Morland then read a report by Captain S. B. Miles, Bombay Staff Corps, and Acting 2nd Assistant Political Resident, Aden, describing that portion of the African Coast in the vicinity of Bunder Muryah, the chief port of the Mijjertheyn tribe of Somalis, contributed by Government.

Captain Morland after a few remarks observed that the best thanks of the Society had been already conveyed to His Excellency the Right Honourable the Governor in Council for this valuable and interesting communication. The Meeting then adjourned to next month.

SESSION 1871-72.

SPECIAL MEETING, *October 16th*, 1872.

A SPECIAL MEETING of the Bombay Geographical Society was held in their Rooms, Town Hall, on Wednesday, the 16th October, at 5 o'clock P.M.

Present—Commander G. T. Robinson, late I. N., *Vice-President*, in the chair; Ráo Sáheb Vishvanáth Náráyan Mandlik; Lieut. W. L. Searle, late I.N., F.R.A.S.; J. Burgess, Esq., F.R.G.S., M.R.A.S.; K. R. Kámá, Esq.; Barjorji Sorábjí Ashburner, Esq.; James Taylor, Esq.; Bhagvándás Purshotamdás, Esq.; J. Connon, Esq., M.A.; J. Macfarlane, Esq.; Dhirajrám Dalpatrám, Esq., G.G.M.C.; R. G. Walton, Esq., C.E., F.R.G.S., F.A.S.L.; the Rev. J. S. S. Robertson, M.A., F.R.G.S., M.R.A.S.; T. Ormiston, Esq., C.E., M.I.C.E.; and Lieut. Henry Morland, late I.N., F.R.G.S., F.R.A.S., *Honorary Secretary*.

The business before the Society was to consider a proposal received from the Bombay Branch of the Royal Asiatic Society, which was already approved of by the General Committee of this Society, for a junction of both the institutions, and to nominate a Sub-Committee to confer with that of the Asiatic Society for arranging the conditions on which it should be effected.

The *Honorary Secretary* having read the notice calling the General Meeting, the Rev. Mr. Robertson submitted that he was unaware of any definite proposition before the Meeting; that probably members of both Societies might object to amalgamation, as he himself did, and was averse to place the matter in the hands of a Sub-Committee before it was exactly known what was really the proposition, and how it affected both Societies.

The Chairman explained that as a proposition for the amalgamation had come before the Society, and some of the members desired it, the present General Meeting was called to enable members to give expression to their views on the subject, and, if desirable, to appoint a Sub-Committee to confer with the Sub-Committee of the Asiatic Society, and determine on what terms the amalgamation could be made; the result of this conference to be communicated to the Society at a General Meeting to be called as early as convenient, which General Meeting would determine whether or not amalgamation was to be effected.

Mr. Burgess in an eloquent speech dwelt on the advantages of amalgamation to the two Societies, and the cause of Natural Science generally.

The *Honorary Secretary* followed in the same sense, and dwelt with much force on the pecuniary benefit to both Societies, as well as showing that very many members of the Asiatic being members of this Society, the work of amalgamation was already begun.

Ráo Sáheb Vishvanáth N. Mandlik and Mr. Macfarlane followed with some very pointed remarks to the same effect, and which were warmly received by the Meeting; and after some general conversation, in which all the members present took part, the following propositions were carried unanimously:—

1. Resolved, that the Society entertains with favour the general proposal to amalgamate the Bombay Geographical Society with the Bombay Branch of the Asiatic Society.

2. Resolved, that to carry out the proposed arrangement, the following members be appointed a Sub-Committee to confer with that of the Asiatic Society, and thereafter to submit the conclusions arrived at to a General Meeting of this Society, for confirmation or otherwise, as early as convenient :—

Commander G. T. Robinson, late I.N.; T. Ormiston, Esq., C.E., M.I.C.E.; J. Macfarlane, Esq.; Lieut. W. L. Searle, late I. N., F.R.A.S; Ráo Sáheb Vishvanáth N. Mandlik; and Lieut. Henry Morland, late I.N., F.R.G.S., F.R.A.S.

The Meeting then terminated with a vote of thanks to the Chairman.

SESSION 1872-73.

Special Meeting, *January 10th*, 1873.

A Special Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Friday, the 10th January 1873, at 5 o'clock P.M.

Present—The Hon'ble Mr. Justice Gibbs, C.S., *President*, in the chair; Commander G.T. Robinson, late I.N., *Vice-President*; Captain G. F. Henry, *Vice-President*; Manakji Kharsetji, Esq., F.R.G.S., F.R.S.N.A; Atmaram Pandurang, Esq., G.G.M.C.; Varjivandás Mádhavdás, Esq.; Lieut. W. L. Searle, late I.N., F.R.A.S.; J. Macfarlane, Esq.; Dhirajrám Dalpatrám, Esq., G.G.M.C.; Professor F. J. Candy, Esq., M.A.; James Taylor, Esq.; Bhagwandás Purshotamdás, Esq.; Náráyan Vasudeoji, Esq.; T. Ormiston, Esq., C.E., M.I.C.E.; Kharsetji Manakji Kharsetji, Esq., B.A., Oxford.

Captain Robinson, *Vice-President*, in the absence of the *Honorary Secretary* on duty, read the minutes of the Special Meeting held in October last; also minutes of a meeting of the two Sub-Committees appointed by this Society and the Bombay Branch of the Royal Asiatic Society called last month, for deciding the terms and basis on which the amalgamation of both the Institutions could be effected.

The Hon'ble the *President* observed that the business before the

Society was to consider the following Memorandum of the terms which both the Committees had agreed upon :—

The Society's property consists of the following :—

2,260 Books and Atlases	Rs. 8,070	0	0
2,500 Maps and Charts on Rollers and in cases, &c.	2,500	0	0
4 Pictures.....	2,000	0	0
2 Globes	700	0	0
Book Cases, Furniture, Instruments, and Transactions ...	9,170	0	0
	Rs. 22,440	0	0

which we are prepared to combine with those of the Bombay Branch of the Royal Asiatic Society on the following terms, viz. :—

1. The two Societies to be amalgamated, the Geographical forming the Geographical section of the Asiatic, and analogous to the Physical section of the Asiatic Society of Bengal. The Geographical section to have its Secretary, who shall be Joint Secretary of the United Societies, with also a Sub-Committee of the General Managing Committee for the Geographical section.

FUNDS.

2. The Government Grant of ..... Rs. 50 0 0
The Premchand Raichand Fund, amounting to ... 2,659 11 3
The Bhagwandas Purshotamdas Fund, amounting to 498 15 4

be kept for the Geographical section, and applied to the purposes for which they were originally given.

3. The subscriptions of those who remain only members of the Geographical section be given over to the Asiatic Society.

4. Present members of this Society to continue members of the new section at the present rate of subscription, and to be eligible as members of the Asiatic on payment of half the Asiatic subscription, in addition to their Geographical subscription. All present members of the Asiatic Society to be Members of the Joint Societies gratis.

5. Life members of the Geographical Society to continue life members of that section of the Asiatic, but in the event of the Asiatic Society at any future time admitting life members, the donation already paid by life members of this Society should be considered.

6. In the event of a gentleman being a life member of the Geographical Society, and a subscribing member of the Bombay Branch of the Royal Asiatic Society, his subscription to the joint Society to be Rs. 90 per annum.

The Hon'ble the *President* having taken the sense of the Meeting with regard to the above terms, it was proposed by Captain Henry, and seconded by Mr. Náráyan Vasudeoji, and unanimously carried :— "That the terms of amalgamation proposed by the Sub-Committees be approved of by this Society, and the Asiatic Society be informed accordingly."

It was also decided that in submitting the memorandum of the terms to the Asiatic Society, this Society should suggest that suitable accommodation be provided on the main floor of the Town Hall for the Geographical section. They considered that the Rooms formerly occupied by the Government Central Museum would be well adapted for the purpose, and as the present Asiatic Society's Rooms were already cramped, additions to the joint Library on the subjects of Geography, Travels, Geology, Meteorology, Astronomy, Navigation, &c., might be added to the Geographical section. The Meeting then closed with a vote of thanks to the Hon'ble the Chairman.

TRANSACTIONS

OF THE

BOMBAY GEOGRAPHICAL SOCIETY.

ART. I.—*Notes on Annesley Bay*, by EDWIN DAWES, Esq., late I. N.

Read before the Society, November 26th, 1868.

So much has lately been written and spoken on things Abyssinian, such a mass of information collected about the country and people of our late enemy Teodros and those of the would-be independent chieftains who surrounded his territories, and so many have treated on everything connected with the subject, that the rough notes of an unscientific and hardworked official lately stationed at Annesley Bay will scarcely, I fear, be of sufficient interest to gain even a casual hearing from those who must, now that the excitement of the Abyssinian Expedition is over, have already begun to find a place for the latest work on Abyssinia in a corner of the book-case, and dismissed the whole matter for topics of more recent interest.

Gúbut Doknú or Annesley Bay was visited in the year 1804-5 by Lord Valentia, one of the Hon'ble Company's cruisers having been placed at his disposal; and some sketches and charts of Annesley Bay, the Bay of Massua and Dissi or Valentia Island, by Lieutenants Charles Court and W. Maxfield, of that vessel, still remain to show that the visit was more than a cursory one. The latest chart of the bay was made by officers of the Indian Navy during the general survey of the Red Sea; but so little could it have been divined that it would ever become the basis of extensive warlike operations, or that a fleet of nearly two hundred vessels, many of them propelled by a power then hardly in its infancy, would float upon its clear waters for the punishment of a potentate whose kingdom was at best known only

partially to a few traders and travellers, that it was not apparently thought necessary to give more than a general outline of the bay and its surroundings.

The main features of the bay are decidedly volcanic, the right, or Hurtow, side near the sea being chiefly composed of decayed coral mixed with shells, and partly covered with a thin crust of poor soil. The land rising to a blunt cone at the entrance of the bay forms the peak of Hurtow. The rocks which compose the actual main land, and of which the coral is merely an incrustation, are mostly sandstone, in some instances very hard and black, in others of a lighter colour, easily broken into slabs or flakes; and especially towards the entrance of the bay and about the island of Dissi mixed with feldspar, mica, and other shining particles, which give it at first sight almost the appearance of granite. The decayed coral is sometimes so light and porous as to float on the surface of the water.

The ground towards the head of the bay is broken by deep ravines, the sides of which are in many places perpendicular, in others more inclined, from the masses of stone and boulders which have from time to time become detached. Everywhere the strata are distorted and irregular, giving the idea of some great natural convulsion which perhaps, according to the theory of one who has travelled over considerable portions of the country between Tajourra and Massua, may have connected all that part of the coast (which from the inland salt lakes and other marine indications there is reason to suppose was either a series of islands or a peninsula) with the main land: from the formation of the coast line the former idea would appear to be the most probable, though after the lapse of many centuries leading features become partially obliterated, and the condition of a country, even so sterile a one as the littoral of Abyssinia, becomes so altered that it would most likely require very scientific investigation to decide the point with any degree of accuracy.

The bottom of the bay would appear to be composed almost entirely of mud, in some parts mixed with shells, in others with washings from the coral rocks; through this the rocks occasionally crop, but these, so far as were discovered, are only dangerous near Dissí Island, at the entrance of the bay, and along the eastern shore, which is lined with coral reefs. The western shore is a low plain of alluvial deposit, varying in breadth from about thirteen miles to

one mile and a half, backed by the range of hills from which the Abyssinian plateau commences. The shore line consists of a series of spits forming shallow bays, some of which are muddy and bordered with mangrove trees and bushes, and covered for some distance inland at spring tides; others, where the soil is a little raised above high water level, and where it is more sandy, have deeper water close to the beach, and are more convenient for landing. There is a singular absence of stone on the left shore of the bay, its general character being that of hard sandy mud encrusted with salt, traversed in many places by the marks of floods and rivulets, abounding in driftwood, and for several hundred yards from the sea so little above its level as to be always more or less damp; further inland its nature becomes more that of dust than sand, and so easily raised by the wind as to be very trying to travellers. Through this stony hillocks break occasionally till at the foot of the hills the ground is covered with rocks and boulders which appear to have been washed down by heavy floods; these continue up the mountain passes; and doubtless the theme preached by these particular stones was a hard lesson in patience to the resolute engineers who smoothed the path of our army. Through the plain cut several watercourses which lead the watershed of the highlands to the sea; these are generally dry, but during the winter months become suddenly flooded with impetuous torrents which disappear almost as suddenly as they arise.

The extreme length of the bay is about twenty-seven miles, its breadth at the entrance thirteen miles, narrowing about half-way to five miles, and then spreading out in a deep curve which forms the head of the bay. The whole aspect of its shore is that of sterile repose and sameness, the only relief to the eye from the glare of its arid beach being the small patches of green mangroves, which serve to make its barrenness more apparent; but looking past this to the westward the landscape is not unpleasing, especially in the early morning, when the bold ranges of hills, whose sombre hues, relieved by a few white dew clouds and backed by the blue mountain tops of the Abyssinian ranges, display a variety of lights and shades which would charm any admirer of mountain scenery.

The shores of the bay are very thinly inhabited; on the right side are a few small villages of Danakil, and on the left a few nomad Shohos; the only village continually inhabited being that of Zoulla, the population of which may perhaps average about five hundred

souls; it is situated about three and a half miles from the sea coast; its huts are built of brushwood and such rafters and poles as can be collected from the adjacent stunted jungle; a few of them are of an oval shape, but the greater number with sloping roofs thatched with small branches and a kind of dwarf bamboo which is found in the watercourses. There is a small Egyptian garrison here, and at a place called Arrafali, at the head of the bay. The other villages occasionally met with were merely temporary huts built of branches of juniper or mimosa, interlaced with smaller ones as a protection from the sun, and sometimes covered either with coarse grass or dried skins. The villages in the passes and ravines are built of loose stones, and, advantage being taken of the natural formation, such as a ledge of rock, a small ravine, or some other cover, are so constructed of the surrounding stone as to be not easily discovered.

The inhabitants, in common with all the other littoral tribes profess the religion of Islâm, but so degraded are they and of such a low type of humanity, that I doubt their knowing much more of it than its name. They are treacherous and cowardly, great thieves and incorrigible liars; in fact, I suppose it would be difficult to find worse specimens of mankind. Their bodies are generally thin almost to attenuation, but their features have not at all the negro cast; the aquiline nose, high forehead, and thin lips being often seen; the forehead, however, is generally very narrow, and the eyes have either a stolid, foolish stare, or, when they are at all excited, the quick, furtive glance, almost that of a wild animal, only particularly noticed among barbarous races. The women generally have flatter features and are more ill-looking than the men, though commonly of stouter build, which may be attributed to their being hewers of wood, drawers of water, and beasts of burden in general to the family. The dress of the men is usually a cotton cloth thrown loosely over the body, and confined at the waist with a thong of leather, always very dirty and generally very ragged. The women wear a skirt of leather fitting very tightly to the body, reaching to the knees, and frequently ornamented with white cowrie shells, a few beads on the arm or round the neck, and a thick coating of grease generally complete their costume. In many cases the head is entirely shaved, in others about a hand's breadth is cut nearly close on the crown, leaving a tuft of wool over the forehead and at the back of the head, which, though perhaps not more peculiar than the style of ladies' head-gear adopted in more civilized countries,

certainly has a very singular and grotesque effect. The men seem to devote a good deal of time to dressing their hair, which generally sparkles with grease; the back and sides of the head are clustered with thick woolly curls reaching sometimes to the shoulders, and of which they are very proud; the crown of the head being covered with a dense mop, through which a long curved wooden skewer is stuck in a rakish sort of way, its principal use being to tease out the mop aforesaid and otherwise titillate their scalps.

The coast tribes are a decidedly pastoral people, though some rude attempts at cultivation were seen. The grain generally appeared to have been sown on circular clearings, which, being surrounded by brushwood and branches of trees, seemed to have been left to its fate till the primitive husbandman might wander back with his flocks to gather whatever resulted from his careless tillage. Their flocks and herds comprise cows, goats, camels, and a very inferior description of sheep, many of which, of the fat-tailed species, have long sandy-coloured hair; the cows are small but well made, and frequently without the hump common to the Indian breed; the camels would not strike one as being very excellent, and appear to be valued as much for their milk as their carrying powers; indeed, the household gods of a Shoho family are not likely to prove very burdensome, as they are generally all contained in three or four skin bags.

Milk seems to be the favourite diet, and is generally taken sour; this, eked out with a little ghee, dourra (jowari), the fine seeds of grass which are winnowed and collected by the women and children and a kind of ground nut which they find by digging a few inches below the soil, with sometimes a little flesh or a few dates, appears to satisfy their simple wants.

The Shohos exhibit a good deal of care and taste in the manufacture of their water jars, bowls, &c.; these (in common with the different tribes of Danakil and Somal) they weave from the fibres of a species of aloe which is found on the rocky hill sides; the fibres are very tough and strong, and at the same time light, and they are so closely and finely woven as to be perfectly watertight and dry on the exterior; the jars especially are of a very pretty and classical shape, and the larger ones are frequently ornamented with small white cowries, which are interwoven in various patterns with the outer fibres.

The arms generally used are the shield, which is circular and

about two feet in diameter, made of several thicknesses of bulls' hide, and ornamented with some rude design indented on the outer surface; the spear, with its long lance-shaped head, is sometimes fastened on a staff about eight feet long, with coils of copper or brass wire, this is more common among the Danakil, and may be more for ornament than use, as many merely have the staff driven into the hollow in the lower part of the spear-head; the staff always has a strip of iron twisted round its lower end; its use is twofold—as a counterbalance to the spear-head when thrown, and to prevent it from being worn away when used in walking; a long curved sword, with a wooden handle and no guard, is often worn on the right side, the leathern scabbard of which fastens round the waist with a belt and rude buckle. The iron from which these arms are wrought is always of a very inferior description. The club is the commonest weapon of all; it is made of the root of babul or other hard wood, and is of many patterns and designs.

In walking, the Shohos, especially those of any importance, almost invariably carry a long, straight, slender wand; it is cut so as to leave a fork at the upper end, and is of a convenient length to rest the arms on when standing up; the bark is carefully peeled off, and the wood, which is covered with projecting knobs, neatly smoothed.

At the commencement of the Abyssinian campaign most of the Shohos had but a very faint idea of the value of money, and a couple of handfulls of rice would often purchase more than any coin; but long before its close (though the price of an article, and one an-eighth of its value, would be named at a *rial*, so vague were their notions of monetary transactions) they were eager enough to become possessors of British silver, their interest in which has, I fear, by this time been considerably diminished by Egyptian officials.

It would be difficult to note many peculiar customs among a people of such primitive habits unless one actually lived in their midst; but their way of holding a council was worthy of notice. Each man having squatted on his hams close to his neighbour, the whole forming a large circle, the orator of the party proceeds to work himself up to a proper pitch of excitement by jumping about in the centre and beating the ground with the branch of a tree, and suddenly breaks forth in a volley of guttural; his harangue is frequently interrupted by any one who has something to say—now by an elder who may be offering some suggestion, now by a precocious youngster who,

may be, wishes to air his juvenile eloquence; and so it goes on till the meeting appears to break up by every one jumping to his legs simultaneously and joining in the general clamour. Several of these meetings were held by the Shoho labourers employed at the commencement of the campaign with reference to strikes for higher wages, which they occasionally indulged in, and which, as such strikes generally do, ended in the importation of foreign labour, to the discomfiture of the Shohos. Another curious custom is that of holding up a cloth or other screen before a person in the act of drinking; although it would not appear to be a general custom, we noticed it at a cluster of huts near the head of the bay, where, having stopped to ask for some water, the people were civil enough to spread skins in a tree overhead as a shade, and others on the ground for us to recline on, and having brought bowls of sour milk and water, always went through the face-screening ceremony with us and among themselves. I had heard of this as being the custom among some of the Dunakil tribes, but had never seen it put in practice before.

The Shoho graves (placed according to the usual Mahomedan custom) are also worthy of remark, from the care which is taken to protect them from the attacks of wild animals by piling large stones over them; these are frequently built up in an oblong form, and ornamented with black and white stones arranged so as to form a rude device; sometimes one or more flat stones would be erected at the head or foot, these were said to mark the grave of a warrior, showing the number of men who had fallen by his hand; it is also said that the dead are buried in a sitting posture, the entrance of the grave being very narrow, but formed at the bottom into a cavity against the side of which the body is rested.

The temperature of Annesley Bay is generally the oppressive damp heat common to that part of the Red Sea, varied occasionally in the summer months by hot winds, which usually succumb to the sea breeze about noon. With a dry atmosphere, the thermometer sometimes rose to 108deg. and 110deg. in the shade of a well-ventilated room; but with a damp atmosphere and the thermometer ranging about 95deg. the heat was often found to be much more distressing. The coolest weather experienced was from the end of November to the end of February, when the days were frequently cloudy, with occasional showers. On the 19th March, the bay was visited by a

revolving storm; a heavy bank of clouds collecting in the direction of its approach had given warning for some days beforehand. The strength of the storm lasted about forty minutes, and some of the squalls were very severe, accompanied by heavy rain; the wind veered in a contrary direction to that generally taken by revolving storms in northern latitudes, and the storm's path seemed to be from the S. towards the N. Some damage was done to the shipping, many vessels having dragged their anchors and fallen foul of those near them, and several native craft were thrown against the bunders or on the beach, and broken by the violence of the sea; in camp, numbers of tents were blown down, much to the discomfort of their occupants, whose belongings were wetted and destroyed by the driving rain.

There was little time to observe the fauna of Annesley Bay, but the animals commonly seen were two varieties of hyenas, jackals, a species of civet cat, hedgehogs, a kind of jerboa, a wild pig called the wart hog, hares, porcupines, two or three different kinds of monkeys, conies, a small and very graceful antelope called the Beni-Israel, and the antelope common to most parts of the African coast —an animal standing about thirty six inches high, and weighing about a hundred pounds. Elephants occasionally visited the shores of the bay, but no large tuskers were seen; the skin was of a very much lighter colour than that of the Indian elephant, and the ears twice as large; they are very active, and climb about the hills in places looking almost impossible for so ponderous an animal. The pugs of what were supposed to be lions were seen several times, but I do not remember a reliable instance of the animals themselves being met with. Ostriches were seen near the head of the bay; guinea fowl and a large kind of partridge, with a bare orange-coloured neck, which is also found in numbers in Turkish Arabia, and called by the Arabs "Dejajel-burr," were very common; also a kind of bustard florican, which went in pairs; the larger and smaller species of bustard were frequently seen, several kinds of doves, a saddle-back crow with white plumage on the shoulders and breast; eagles, and those birds of prey usually met with in India, were also common; severals kinds of flycatchers and larks were seen, and a small linnet which lived among the reeds near a hot spring; but small birds were not found in great numbers near the sea; flights of ducks, geese, and teal passed over the bay in November

and December, taking a southerly direction, and some of the latter, apparently exhausted, settled on the water near the landing place. Pelicans, storks, cranes, gulls, curlews, snippets, and other small waders, and several varieties of the tern, frequent the beach. Snakes, scorpions, and centipedes were not uncommon; a few locusts visited the bay; but beetles and butterflies were rare, and of the latter I only remember seeing a few azure blues, common browns, and a kind of fritillary. Of the several kinds of sea-fish, the commonest were varieties of the ray, rock-cod, grey mullet, and sea perch; sword-fish, and hammer-headed, and the common variety of shark were often seen. Of the crustaceæ, prawns, craw-fish, and eight distinct species of crab were found, the smallest of which, a very diminutive red kind, with one claw nearly as large as the rest of its body, found a dwelling among the crevices and branches of the live coral. One or two starfish, and a large variety of the echinus having long black spines, and commonly called the "sea egg," lived among the rocks of the east side of the bay, where oysters also were plentiful; but very few varieties of shells were collected. The common large white jelly fish, the blue variety, and the sea-nettle were often seen, but none of those beautifully-coloured anemonies or pleasing varieties of sea-weed which adorn the rocks and shallows of our own coast were found at Annesley Bay.

It may be imagined from the description of the soil that the vegetation is very scant. Thickets of juniper afford cover and shade to wild animals; a kind of babul, camel-thorn, mimosa, and a species of acacia are scattered about, especially near the base of the hills; and frankincense trees are met with occasionally. The shore is in some places lined with mangroves, which attain almost the dimensions of trees, and a large cactus grows in clumps at the southern part of the bay, among the roots of which the wart hogs frequently burrow. A low heathery kind of plant covers the more sandy soil in large patches, and during the showery months a good part of the plain is thinly covered with grass which grows to a rank luxuriousness under the shady bushes. Wild flowers are seldom seen; large clumps of dry-looking rushes grow about the hot spring; a kind of vine climbs thickly over some of the bushes, and when yellow and dead still clings to their branches, giving them from a short distance the appearance of thatched huts; and the colocinth, with its gourd-like fruit, creeps over the sullahs and sandy patches. Doubtless a botanist would find many ob-

jects of interest, but to an ordinary observer the flora of Annesley Bay were not particularly attractive.

The paucity of water in the neighbourhood of Zoulla, which caused a large item in the expenditure of the Abyssinian Expedition, is so well known that any comment on the subject is almost needless. The best water on the eastern side of tbe bay is found in a ravine bearing at a rough guess about S. 50 E. from the landing place on the opposite shore. The rain water lodges in deep crevices in the sides of the ravine, which are nearly enclosed by large boulders of rock, forming natural reservoirs, from which there can only be a small amount of evaporation; from these crevices the natives, by creeping down with a rope, procure the small amount of water which they require. Further towards the entrance of the bay are some deep wells cut in the coral rock, but the water is scarce and very brackish. The only water found on the west side of the bay nearer than Koomaylo was in some mud pits in the bed of a watercourse near the sea, at a place called Mulkutto. About three miles from Arrafali are the hot springs of Azfat, which, rising about four hundred yards from the beach, run down through thick jungle to the sea. The springs bubble up in a small irregularly-shaped basin. The water is nowhere over three feet deep, and the rocky bottom of the pool is covered with a soft muddy ooze; the water is inhabited by numbers of small fish; it is saline, but not so much so as to prevent its being drunk by various animals. The temperature is about 190deg. and the natives have great faith in its waters as a cure for rheumatic pains, and I believe it to be really beneficial in such cases.

Crossing a watercourse in a northerly direction, and about three-quarters of a mile from the village of Zoulla, you reach the extensive mounds of what, till quite lately, have been supposed to be the ruins of the ancient Greek merchant settlement of Adoulis, from the name of which that of the modern village is supposed to be a corruption. Since the researches of Captain Goodfellow, R.E., and a company of Madras Sappers, the origin of these ruins would appear to be uncertain; but it is now thought that a Christian settlement must have been built on the site and with some of the materials of the more ancient Greek ruins. The interior of what was considered to be a church, was found, with portions of the two rows of pillars, and some of the marble flooring, the marble white and sometimes slightly veined with red; besides these, part of the shaft of a small marble column

and a slab of stone, on which was cut a sort of Maltese cross in bas-relief, were also found, but no inscription or writing of any kind. One or two houses were excavated, but only large quantities of coarse pottery, some highly-glazed pieces, and a few lumps of metal which had evidently been in a state of fusion, were discovered. Want of time brought to a conclusion these researches, which, conducted under more favourable circumstances, might have proved much more interesting.

In conclusion, I trust that these notes, though very rough and imperfect, will give some idea of the inhospitable coast on which part of the British forces were destined to spend the greater part of a year, but so diffident am I of being able to convey a description of our position by the few random observations which were all I could find time for amidst a press of office work, that I hope any inaccuracies will be excused in a paper for which I must beg your most kindly criticisms.

ART. II.—*Notes on the Hot Springs of Lasúndará, in the Kaira Zilla* by JAVERILAL UMIASHANKAR YAJNIK, Esq.

Read before the Society, March 18th, 1869.

LASUNDARA* is a village in the Kaparvanj district of the Kaira Zilla, (Gujarat). It is about 24 miles from Neriad (a station on the B. B. and C. I. Railway), in a north-easterly direction, and about 11 miles from Dakor in the northern direction. Dakor is a noted Hindu shrine, and pilgrims going to this place often make it a point to visit Lasúndará to bathe their bodies in the '*Ráma Kunds*,' as the hot springs are called. The village of Lasúndará is situated in a somewhat low lying ground, the surface being mostly covered with a salt crust, called '*Usa*.' About the site of these springs, heaps of salt used to be prepared in the time of the previous government, and also under the present government, until the operations were given up on account of the government salt monopoly. The wells in the village partake more or less of this saline character of the surface of the soil. There is, in fact, only one sweet-water well, situated at the distance of a mile from the village, which supplies the people with water fit for drinking. There is, however, a spacious pond or *talao* at the southern extremity of the village, which compensates them for the scarcity of sweet-water wells. It is partly availed of by the people for drinking and domestic purposes, but largely by the cattle. The water of this pond lasts generally during the whole of the year.

* The term, Lasúndará, is a corruption of the original Sanskrit compound लवणवसुन्धरा, *Lavan vasundhará*, signifying a place holding a deposit of salt. Originally the village was known under the name of 'Lúnpur' or 'Salt village.' In old documents as far back as 200 years, the village is styled "Lun-Sundara,' from which the modern name, Lasúndará, is evidently derived. There is another group of similar springs in this zilla. It lies between Thasra and Godra, at the distance of about 6 miles eastward from the former. It is known as 'Tuá Kankunpur' springs. In the zilla of Surat also there are Hot Springs at Unai, where an annual fair is held. And not far distant from Bombay, we have at VajráBái a similar group of hot springs, with their customary annual fair, to which many Hindus from Bombay resort under a notion of sanctifying their bodies by bathing in the water of the spring.

Early in the morning of the 1st October last, I proceeded, in company with two friends, to see the hot springs which lie at the southern extremity of the village. The place where these springs are located is called "*Rámakshetra*," from tradition having assigned it as a halting-place to the hero of the Rámáyana on his march through the district. Here Ráma is said to have performed the ceremony of *Srádh*, on the anniversary day of his father, Dasaratha. Sitá, his wife, being required to join the ceremony, wanted hot water to bathe in. To get this, Ráma is said to have pierced a number of arrows into the ground. On taking them out water gushed forth, and so was Sitá bathed. The Bráhmans of the place, who are found about the springs from day-light to sun-set, repeat this story in the presence of almost every visitor who comes to bathe here, and have thus invested the place with a sanctity, joining religion to a natural phenomenon, which enables them, at least, to earn their daily *Dakshinas* from the visitors. There is a temple of Somnáth by the side of these springs, which appears to have been lately constructed.

The surface of the springs is about 3 feet below the general level of the surrounding ground. Such of them as are close to each other are grouped into compartments, built with *chunam* walls up to the level of the ground. The visitor has to reach the springs by descending the steps. These compartments are three in number, of which two lie close to each other, and the third is situated at a distance of about 30 feet from the others. The first compartment, which is almost a square, contains a group of seven springs. Its outside length is 23 feet, and inside length, 17 feet 8 inches. It is 3 feet 10 inches below the level of the ground. Of the seven springs in this compartment, the central one is the largest and the hottest. It is 7 feet 10 inches deep. I had a thermometer by me which at the time (about 8 o'clock in the morning) showed 88 deg. fahr. as the temperature of the surrounding air. On dipping it into the central spring, about half a foot below the surface of the water, I found the thermometer rose at once to 117 deg. where it remained for about ten minutes. I then sent it down, having tied it with a string to the bottom of the spring, and allowed it to rest there for about ten minutes, after which it was taken out, when the instrument showed 122 deg., thus indicating a difference of 5 deg. between the temperature of the top and that of the bottom. The thermometer was then dipped into the next spring, to ascertain its top and bottom temperatures, which were found to be 113 deg. and 114 deg. respectively.

The process was thus repeated in the case of each spring, and the following are the indications of the temperature :—

COMPARTMENT A.

				Degrees Fahr. at the top.	at bottom.
Temperature of central spring,	No.	I.	...	117°	122°
,, spring	,,	II.	...	113	114
,, ,,	,,	III.	...	102	100
,, ,,	,,	IV.	...	108	112
,, ,,	,,	V.	...	106	108
,, ,,	,,	VI.	...	114	119
,, ,,	,,	VII.	...	112	111

It will be seen from the above that in the case of springs Nos. I., IV., V., and VI. the temperatures at the bottom are greater than at the top; that in No. II. the top and bottom temperatures are almost equal; and that in Nos. III., and VII., the temperature at the bottom is less than that at the top. All these seven springs are situated at a distance of about 1 to 2 feet from each other and hardly a foot from the central spring.

Each of the springs is in the form of a square, having its banks or edges at the top built of *chunam*, to prevent its water flowing into the next spring. Some of these edges have given way, especially those of spring No. VI. in this compartment. This spring was at one time considered the hottest in the group, hotter than even the central spring. But since the time its banks have given way, its water, getting mixed with the colder water of the nearest springs, shows a much lower temperature.

The water in each of these springs is constantly seen to rise up and overflow its banks. In the day time, however, this is much less observed, as the inhabitants of the village, as well as pilgrims from neighbouring villages, use the springs more or less for bathing purposes. At night the phenomenon is seen to great advantage. But bubbles are often seen to float upon the surface and burst, both during day and night. People who come here to perform their ablutions do not plunge their bodies into the springs. They sit by the bank of each spring in turn, and dipping their *lotas* into the water, pour it over their persons. These *lotas*, which are made either of brass or copper, after they are once or twice dipped into water, soon lose their

brightness, and become dark grey, owing to the saline and vegetable ingredients of the water acting chemically upon the metal of the *lotas*.

At the bottom of these springs an accumulation of mud takes place within a few months, which frequently stops the free percolation of water through the beds of the earth. In the central spring, there is said to be a hole of about two inches in diameter on the eastern side, from which water springs forth with great force and rapidity.

Compartment No. I. is well *chunamed* and cleanly kept. It was built in the Samvat year 1846 (corresponding with the Christian year 1790) by Válá Mókam, a Barot or Bard of Bijapur, in the territory of H. H. the Gaikwád.

Compartment No. II. built by the Móhód Brahmans of Kaparvanj, but lately repaired by Mr. Jasbhái Sárábhai, of Petlad, contains only one spring. It lies close by the side of compartment No. I. It is not quite square, one side, measured from within,—from east to west—being 11 feet 2 inches, and the other, from north to south, 12 feet 3 inches. The spring in this compartment is 8½ feet deep, and the temperature of its water is 101 deg. both at the top and at the bottom. It is not so largely availed of for bathing purposes, as the springs in the first compartment.

We now come to the third compartment, which is situated at the distance of about 30 feet from the first in a southern direction from the village. It is 26 feet by 30. There are nine springs in this compartment, which was built and plastered in the Samvat year 1895 (corresponding with the Christian year 1838) by one Shivashankar, a Vadnagara Nágar Brahman, native of Petlad, when he was Mazmudar of Kaparvanj. The central spring in this compartment is larger in dimensions than even the spring of the first compartment. The temperatures of the several springs forming this compartment both at the top and at the bottom are given below, the numbers 1, 2, 3, &c. denoting the particular spring in the compartment.*

		Degrees Fahr. at the top.	at bottom.
* Temperature of Spring No.	1 ...	90°	92°
" " " "	2 ...	91	90
" " " "	3 ...	90	90
" " " "	4 ...	89	89
" " " "	5 ...	89	89
" " " "	6 ...	108	114
" " " "	7 ...	94	94
" " " "	8 ...	89	88
" " " "	9 ...	87	87

It will be seen that all the springs in this compartment, except spring No 6, are much colder than those in the first.

In connection with these springs, it may be remarked that their temperature varies at different seasons of the year. In winter, for instance, it stands far higher than in summer, or the rainy season. In the hottest months of the summer, the temperature of even the warmest spring is bearable, that is to say, water from it can be poured upon human body without its feeling a keen sensation. It also happens that previously to the setting in of the rains, the temperature of the springs becomes intensified, and this fact affords the inhabitants of the village a pretty sure prognostic of rain. This phenomenon has been observed to take place so regularly that the villagers are able to predict, with some certainty, a few days before, when there will be rain. During the recent flood in Gujarát, this was distinctly observed by the people of Lasúndará. Two days before the date of the heavy flood, the water in most of the springs began to grow unusually hot, which led them to expect a heavy fall of rain. And a heavy fall did take place. After rain, the temperature subsides to its ordinary level.

The inhabitants of Lasúndará use these springs as their daily baths at all seasons of the year, partly from a feeling of sanctity, and partly from a sense of economy, the hot water causing them a saving of fuel to which they would otherwise have recourse for the purpose of getting hot baths.

The hottest of the springs emit generally a very disagreeable odour, sulphur being found to be more or less a chief ingredient of the water. The spring water is often used by natives of Gujarat as a restorative in the diseases of the skin, especially leprosy, but how far the remedy has succeeded I am not in a position to say, though many persons are said to have got rid of their leprosy by bathing in these springs. It is said that by constant bathing in these waters, the whiteness of the skin assumes a ruddy appearance, which by lapse of time turns into the natural color of the skin.

The village of Lasundará contains about 500 to 600 houses, built mostly of mud, and roofed with tiles. The inhabitants, which number about 2,500 souls, are Brahmans, Banyans, Kunbis, and Kolis, and are more or less cultivators. The land here does not yield so plentiful a crop of produce as in other parts of the district, and hence the government assessment is comparatively low. There is a Government Gúja-

ráti school in the village, attended by about fifty boys, mostly Bráhmaṇs and Kúnbis. A Játrá or fair is held at the springs twice a year, the one on *Janma Ashtami* in the month of Shrawan (August), and the other on *Ambla Igiaras*, in the month of Kártik (November). On these occasions, Kolis and Bhills, from the surrounding villages, flock in large numbers to purify themselves by bathing in the *Ráma Kunds*.

ART III.—*Some account of the Navigation of the Nerbudda or Narmadá River—with Remarks on the Gulf of Cambay*, by WILLIAM SOWERBY C. E., F. G. S., &c.

Read before the Society, February 24th, 1870.

THE Narmadá is one of the eight rivers which empty themselves into the Gulf of Cambay or Khambát, the others being the Sabarmatí, the Máhi, the Dhádar, the Kim, the Taptee or Tápí, the Bhaunagar or Ghaḍechi, and the Shetruṅji.

The lengths and drainage areas of these rivers are as follows, namely,—

	Length Geo. miles.	Geo. Square miles.
The Sábarmatí	170	7,650
The Máhi with branches	300	16,700
The Dhádar	70	1,050
The Narmadá with branches	750	32,000
The Kím	70	700
The Taptí with branches	450	20,230
The Bhaunagar and Ghelo	85	2,380
The Shetruṅji	85	2,380
Total...	1,980	83,190

These lengths are estimated to include the windings and branches, and the superficial areas are as near approximations as can be obtained

from the Map No. 1, whereon the area drained by each separate river is shown in different colours.

The amount of rainfall over these drainage areas is very varied; in Gujarat it is from 25 to 36 inches per annum, whilst on the Gháṭs it is much heavier, but then again in the high table-lands of the Dekhan, where the Narmadá and the Tapí rise, the fall is less. It has therefore been assumed that the average is about 36 inches taken all over this part of India.

Concluding this to be the case, then the total quantity of rain which falls on the areas drained by the different rivers will be as follows, namely,—

	For every inch of fall.	For 36 inches of fall.
The Sábarmati	653,524,200 tons.	23,526,751,200 tons.
The Máhi	1,426,647,600 „	51,360,315,600 „
The Dhádar	89,699,400 „	3,229,241,400 „
The Narmadá	2,742,238,800 „	98,722,522,800 „
The Kím	59,799,600 „	2,152,827,600 „
The Tapí	1,728,208,440 „	62,216,717,640 „
The Bhaunagar, &c..	203,318,640 „	7,319,613,840 „
The Shetruñji	203,318,640 „	7,319,613,840 „
	7,106,755,320 tons.	255,847,603,920 tons.

It has been considered better to give the above calculations in tons, instead of the customary method of cubic feet or gallons, assuming that there are 10 lbs. per gallon, and 36 cubic feet of water per ton. It has likewise been calculated that 36,905,625 square feet is one geographical square mile.

The late Dr. Whewell and others have estimated that two-thirds of the rain which falls upon the earth, passes off by absorption and evaporation, and that the remaining one-third finds its way direct into the watercourses and rivers, and so thus travels to the sea.

The actual quantity of water that runs into the rivers must of necessity vary considerably in every locality; but one-third may be taken as a very fair average, as it is the result of much careful investigation and of many experiments.

Assuming then that this proportion of water falls into the rivers emptying themselves into the Gulf of Cambay, the quantity over the whole area for every inch of rainfall would be sufficient to form a lake

of about 24 square miles in extent, and 100 feet in depth; and a lake to contain a whole season's rain of 36 inches would require to be about 830 square miles in area, and 100 feet deep, which is equal to nearly one-third the capacity of the Gulf of Cambay, which is 70 miles long, and 35 miles in average width, and is therefore of about 2,450 square miles (geographical) in area, and in many places it is 120 feet in depth at low water.

One inch of rainfall from all the rivers is sufficient to raise the waters in the gulf nearly one foot in depth all over it, and a 36 inch fall would be ample to raise it 33 feet, so that during a heavy fall of rain of 10 inches in a day which sometimes occurs, there would be a rise of about 10 feet in the Gulf, and if this happens during the spring tides, it is not difficult to understand the cause of the tremendous floods which inundate the towns and country near the coast, and the idea of relieving such floods by narrow cuts like the one made at Waracha some years ago, must be entirely futile, and only shows how very little they are understood.

The size of a lake to contain the waters of the Narmadá would be about 9 square miles and 100 feet in depth for every inch of rainfall; and if necessary to contain the whole rainfall of a season, assuming it to be 36 inches, then it would require a lake 324 square miles in area and 100 feet deep, which is upwards of one-eighth the capacity of the Gulf.

The above calculations are merely given as approximations to furnish a general idea or outline of the size of the rivers which discharge their waters into Cambay, and also the relative capacity of the Gulf itself; but the quantity of water falling into it during an entire year is about equal to the quantity of tidal water, which comes into the Gulf twice every 24 hours during spring tides.

The quantity of silt held in suspension, and brought down annually by these rivers must be very great, judging from their muddy appearance during the monsoon; but it is only at that time of the year that the waters are surcharged with detritus, for immediately after the monsoon floods cease, then the water which is beyond the influence of the tides becomes comparatively clear and pure.

In the Gulf, however, and for 100 miles beyond its entrance, over the whole expanse of ocean called the Bombay Bank of Soundings, the waters of the sea are thick and muddy. This has always been considered due to the great quantity of silt coming down the Cambay

group of rivers. This is doubtless quite correct, but the mud held in suspension is not that which comes down from these rivers daily, but it is the immense accumulations of ages which are dredged up from the bed of the sea by the tremendous scour of the great tidal wave, which rolls up into the Gulf twice daily. The node of this tidal wave is at Male Atol, one of the Maldív Islands, Lat. 2-30 N., and the head is in the Gulf of Cambay in Lat. 22-30 N., a distance of 20 degrees.

To estimate the quantity of silt which is brought down by the Cambay or Khambát group of rivers, with any great degree of accuracy, would be a most difficult task; but to obtain a very fair approximation is quite possible.

After certain experiments, it has been assumed that a gallon of water contains 320 grains, a cubic foot of which being 6¼ gallons, would therefore contain about 2,000 grains of solid matter in suspension, which is about ·045 per cent., that is assuming the pound to be equal to 7,000 grains, and about 62½ lbs. to be a cubic foot, and on the assumption that the total quantity of water coming down the rivers is 2,368,918,440 tons for every one inch of rain, or 85,282,534,640 tons for 36 inches of rain, then the quantity of solid matter for 1 inch of rain would be 10,660,132 tons, and a fall of 36 inches of rain would bring down solid matter equal to 383,771,405 tons.

The silt brought down by the rainfall of an inch being equal to an island 1 square mile in area (640 acres), and 10 feet high, and for the whole 36 inches an island of about 36 square miles and 10 feet high. Were this allowed to remain in the gulf, it would gradually cause it to silt up, leaving only narrow channels for the rivers to pass through, but the great Ocean wave, which rushes into the narrow space with such tremendous force, effectually dredges or scours up the bottom, and keeps the matter in suspension, so that the annual accumulation in the Gulf is proportionately small. The depth at which this scour acts is very clearly shown on a model chart to fully 50 fathoms, and not, as is generally believed, to only 10 fathoms.

Assuming that the whole of the detritus were deposited in the Khambát Gulf, which is 70 miles long, and 35 miles wide, or 2,450 miles in area, and in some places fully 20 fathoms deep at low water, it would take quite 1000 years to bring it up to the mean sea level; but as it is probable that not more than 1 per cent remains in the Gulf, the remainder being carried away by the receding tide down towards the node

of the great tidal wave, therefore a lease of 10,000 years might be taken during which the Gulf will in all likelihood not materially alter its present condition; for at the present rate it will take one hundred thousand years to fill it entirely. It must be remembered when making these calculations of deposit, that the detritus is only brought down during the monsoon months, while the scouring action of the tide continues all the year round, and consequently the actual deposit in the gulf can only be a very small proportion of the silt brought down by the monsoon floods.

That there is nevertheless a regular annual deposit, there can be no doubt whatever, and the extent of this is clearly enough shown by the quantity of land that has been gradually warped up in this way. This land is now only very occasionally covered during extraordinary high tides or floods.

But at the same time that this silting up or warping takes place, there is another process going on, and it is this, namely, as the silting up extends, the channels of some of the rivers are narrowed, and consequently by the greater scour thereby induced, they are deepened; and so those *Bets* or Islands, which are seen on the south side of the Narmadá, appear to have gradually risen up out of the bed of the river above the height of the tidal rise.

There are other influences at work also which may need explanation, for when the channel of the river is narrowed, if the same quantity of water continued to come up the gulf, then it would still overflow the Islands; but the gradual deposit at the entrance of the gulf checks the influx of water, and drives it in some other direction. In this instance of the Gulf of Khambát, it is driven westward into the Gulf of Kachh where there are no large rivers to create a silting up; and this has given rise to an erroneous idea that the land in that locality was slowly sinking, as mentioned in a former paper by the author of this.*

The effect then of this gradual silting up as regards the Narmadá has been to deepen the Mid-Channel, giving it a greater capacity for navigable purposes, though in all likelihood the actual tidal flow inwards has been slightly decreased.

That which happens in the Narmadá is however not exactly repeated as regards the Tapí. The Narmadá has a broad open

* Vol. XVIII. pp. 96-104.

estuary facing right down the gulf. The Tapí, on the other hand, has its embouchure immediately behind a low headland called Vaux's Tomb (vide chart No. 2), and this headland effectually prevents the downward scour of the receding tidal wave from removing the deposit of silt, but on the contrary an eddy is created behind the Vaux's Tomb headland, and a bar is formed of such a nature that the annual floods produce but little effect in the way of removing it—the consequence is that the gradual increase of this huge bar is causing that part of the river which is under tidal influence to silt up in the most marked manner, and the extraordinary heavy floods which have more than once nearly destroyed Surat are partly due to the diminished capacity of the lower part of the river, and partly also to the floods and spring tides occurring at the same time.

The bar which checks the outflow of the floods, also retards the free flow of the tide inwards; formerly very large vessels must have come up the Tapí, for two big anchors were recently recovered from the bed of the river opposite Surat Castle, by the author of this paper; the size of the vessels to which they belonged, cannot have been less than 500 or 600 tons; at present only small vessels come up the river, though larger ones might do so at the top of the tide if the trade required them; but they would be aground at low tide. The channel of this river varies in the most capricious manner from year to year, as far up as it is under tidal influence.

There are of course engineering remedies for these defects in the Tapí, did the trade of the river justify the expense, for it must be borne in mind, that all large navigable rivers are kept open by the influx and reflux of the tide, and that the flood waters produce but a minimum effect, and where the tidal rise is high as in the Thames, Tyne, Wear, Tees, Mersey, and Severn, the effect is very great in improving and keeping them open. Now the tide at the mouth of the Tápí is 19 feet, and therefore equal to the best of the rivers named, so that anything and everything might be done, but since the opening of the Bombay, Baroda and Central India Railway, it has rendered the trade of little or no importance at the present time.

Whatever may be the result of the gradual silting up of the Gulf of Khambát, there is one thing very certain, namely, that channels more or less ample will at all times remain open for the passage of the waters of the large rivers that empty themselves into it. The detritus brought down by these rivers is gradually carried to a more

quiescent part of the Great Indian Ocean, and becomes deposited along the Western Coast of India, and on Direction, Adas, Angria, and other banks and at the Maldív and Lakhadív Islands, and it is far more to be feared that this will cause trouble hereafter to Bombay, Kadwar (Carwar), Bepur, Cochin, and other places, than to seriously obstruct the navigation of the Narmadá.

The detritus gradually travelling down to the southward is sufficient to cause a deposit along the coast, and out to the Maldív Islands, of 3 inches in depth for a mile wide; but the deposit is actually spread over an extent of at least 20 miles in width all along the coast; it is therefore only ·015 of an inch per annum, or 15 inches in a century. As the shore line slopes at about 1 fathom per mile, the coast line thus accrues at the rate of quarter of a mile in a century, so that it will be at the banks called Direction, Adas, and Angria, in about 8,000 years. These calculations are curious and interesting, as showing the rate at which the sea recedes, but there are doubless many other influences at work, which would materially modify these deductions, if they were known and could be estimated.

It was not very long ago stated that the foreshore of Bombay above Mazagáňw had receded half a mile in something less than 50 years—this would be at the rate of one mile per century, so that two or three centuries would bring the opposite shores in very close proximity, and very materially narrow the deep water channel. Doubtless the closing up of the Síon Creek, and the numerous reclamations that have gone on during the last ten years, are exceptional causes which have produced so rapid a silting up of the foreshore; but a harbour of such importance exhibiting so decided a disposition to deteriorate, should be watched with the utmost vigilance; as the permanent destruction of similar havens is not unknown in the history of maritime cities. If once the mischief were done, no engineering power could bring the place back to its pristine condition, and trade must then seek other outlets, and some of it would revert to its old ports on the Narmadá and the Tapí.

The Narmadá, whatever other obstructions it may have to its easy navigation, has at present none of those common to the Tapí. The set of the tide into it is as direct as it well can be, and the tidal rise at the entrance is from 25 to 30 feet at High Water springs, the Tapí being only 19 feet. The rise of tide noted at the mouth of the Narmadá on November 20th, 1869 (new moon), was 30 feet.

The extreme width of the Narmadá estuary at its junction wit the gulf is about 13½ nautical miles, and at 16 miles up the rive above Mehgám, it is only about 1½ miles wide, giving an area of 12 square miles, more or less, and this forms an immense bell-shape mouth to the river.

A great portion of this large tract is even at present quite dr except at very extraordinary and unusual tides, perhaps once or twic in 12 months, and much of it has only a film of water over it. Thi is sufficient, however, to render it unfit for cultivation.

There are two channels across this estuary, one to the south towards Hansot, which is dry at low water, the other channel to th north, past Ambhetá (Dej), is never dry, and this is the true sailin channel.

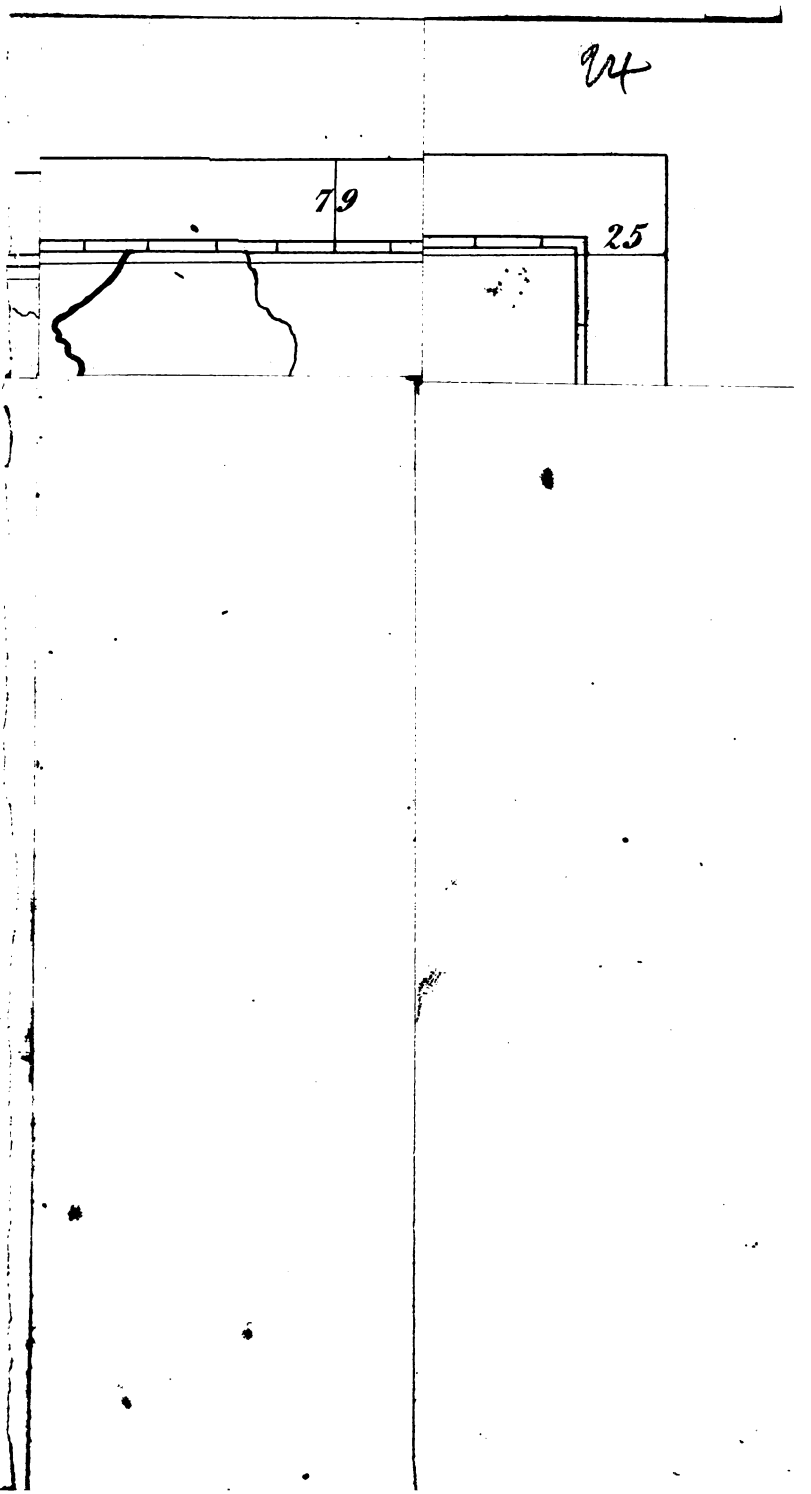
There is no bar at the mouth of the Narmadá in this norther channel, nor does the Admiralty Chart by Captain Ethersey, whic was made 25 years ago, show any bar, though there are two san patches shown on the chart with a clear channel of one and a ha miles wide. The fact of a long spit running southward from the lan at the north for a distance of from 4 to 4½ miles, has given rise t this idea of a bar at the mouth of the Narmadá, which does not exis

The channel between the entrance of the river and Ambhetá ha however, shifted fully a mile and a half to the westward since the la chart was made, so that after leaving Ambhetá in passing down th river, the channel, instead of running in a south-westerly directio down to the sea as formerly, now continues in a westerly course, ti it is opposite to a place called Lohára, and then it runs due south.

There has also been a considerable scour on the gulf side of th said spit, indenting into it to a distance of upwards of half a mile, s that the spit is now only about a mile and three quarters wide, instea of four and a half miles as it was previously, when the chart was mad The spit has, however, increased in length, and the extreme point i now about half a mile more to the southward.

There is a probability that in the course of time the river will forc its way out in a line directly westward across the spit into th gulf where there is, however, great depth of water; the soundings bein from 8 fathoms to 16 fathoms within a short distance of the shore.

Between the outer entrance of the river and Ambhetá there is a small false channel about one mile distant from the extreme point o the spit. This channel is very narrow, and barely perceptible, it is,


79
25

in fact, the space between the former spit and a sand patch existing in 1845, which has not yet closed up.

The width of the channel at the entrance is more than one mile, and the depth of soundings at the outside of the river, where a buoy has been placed, is 7 fathoms, there being formerly 3 fathoms. The latitude of this buoy is 21° 34' 30″ N., and the longitude 72° 30' 20″ E. An inner buoy has been placed about 1½ miles from the outer buoy, the soundings near which are from 4 to 6 fathoms, there being formerly only two fathoms, and these deep soundings continue up to Ambhetá. These show very clearly and decidedly that the channel of this noble river has not deteriorated, but that it has actually been much improved by natural causes alone, and this improvement continues up to within four miles of Bharuch, beyond which point it has certainly become less open to navigation, probably owing to the construction of the railway bridge which, though offering but comparatively little obstruction, a scour has doubtless been created by it, and resulted in the throwing up of formidable sand banks at various points opposite to, and about a mile and a half below Bharuch. There is still a fair channel on the south side of the river for small craft at high tide, but large vessels could not now pass this barrier.

The course of the river Narmadá exemplifies the theory of oscillation very beautifully; commencing at Bharuch, the deepest channel is on the north bank of the river, below this point it passes over to the southern side, and runs for some distance along by a high bank until there is a creek or inlet opening to the south. Opposite to this creek is where the water shoals, and beyond this barrier, large vessels cannot at present pass. The channel then oscillates to the opposite or north bank to a point about 4½ miles below Bharuch, near a village called Disa or Devsa. Here the river is divided into two channels, the principal channel being greatly confined by a *Bet* or Island. The south channel is comparatively dry. The river continues along the side of this high bank to the north for about 5 miles, having a gentle curve southwards, the depths of water at low spring tides being from 18 to 25 feet. These soundings continue close in shore to within 50 feet of the north bank, and continue for a great width across the river. Along this beach an immense number of vessels might be moored, or lie at anchor to load and discharge their cargoes, and they would be well water-borne at all times of the tide if drawing about 15 or 16 feet. These deep soundings continue along the river up to a point opposite

Samaní village, on the northern side of the river, afterwards the channel again crosses over to the opposite shore where there is an inlet or creek leading past the Háńsot-bandar. This is the channel called in the early part of this paper the southern channel, leading right through the estuary, but which is dry at low water. From opposite Samaní, where there is a slight shoal running out from the northern bank, the channel again crosses towards Mehgám; here there is another creek called the Bhuklí or Badrí. Owing to the Háńsot channel, there is comparatively shallower water, but never less during low tide than six feet in the channel, where a buoy has been placed; and there is a tidal rise of from 6 feet 6 inches at dead neaps to 17 feet 6 inches at springs, giving an average of 18 feet of water and 24 feet at spring tides, sufficient to allow vessels drawing 15 feet passing up except at extreme neap tides which last from 4 to 6 tides (3 days). The river continues along the northern side with a fair channel past Kaládrá to a point near Venganí, where there is a high and well defined bank with a tidal rise of from 8 feet 4 inches extreme neaps to 19 feet 6 inches at the spring tides, the extreme neaps being very exceptional, and lasting only 4 to 6 tides (3 days). From Venganí the river again oscillates across to the southern side, the width here being one and a half miles. On the south is the Kersilia Bet or Island, with a well defined high bank, and deep water all alongside, the channel being broad and ample in depth. There is rather shoal water near the first point of the *Bet*, a buoy being placed in 8 feet soundings at dead low water; but the great tidal rise renders this point no obstruction whatever to the navigation. The channel continues along the south bank until it is opposite to a place called Suvá lying to the north of the river, when it again oscillates northward, striking the shore about 2 miles from Ambheta; there is here also a slight shoaling, which offers no obstruction however to the navigation, the tides being very high at this point. At this part of the river there is always from 24 to 27 feet of water at dead low water springs, so that the largest vessels might lie safely at all times of the tide well water-borne.

There has prevailed an opinion that the channel of the river changes greatly every year. On comparing its present condition and course with the Admiralty Chart published in 1845, so far as it goes (which is up to a point above Mehgám), the channel has not materially changed unless it be for the better. But exception must

be made for the part near the river's mouth, where there is a very decided change; this change has, however, been shown to be an improvement on the old channel. There is no doubt that minor changes do annually occur in the river during the monsoons, but it is probable that these changes are chiefly in the upper part of the river, near to and beyond Bharuch, for the tremendous scour of the tide must very soon remove any obstructions within its influence.

The river retains its oscillatory character right down to the outlet, for it again crosses to the south from beyond Ambhetá, and makes a final attempt to bend to the opposite side, when it falls into the sea.

The tidal observations given in the appendix show that the tide flows on an average three hours, while it ebbs for 9 hours; this varies slightly in different parts of the river, as will be seen from the tidal registers taken over one and two lunations. In the upper portion of the river during spring tides, the quantity of water in it is greater at low water than during the neaps, each succeeding flood coming up, before the former has passed off; a careful study of the tidal register confirms this, for at spring tides there is always a greater rise than the subsequent fall, for example:

Springs.

Rise.	Fall.
9 ft. 2 in.	8 ft. 1 in.
5 ft. 11 in.	4 ft. 6 in.
9 ft. 9 in.	8 ft. 8 in.

and so on, while at neaps we have

Neaps.

2 ft. 2 in.	2 ft. 10 in.
3 ft. 9 in.	5 ft. 1 in.
2 ft. 4 in.	3 ft. 1 in.

and so on.

The night and day tides also constantly exhibit a variation, the highest tides being during the night time.

It was stated at the outset that at the mouth of the Narmadá there was a tidal rise of from 25 to 30 feet; the latter was the observed rise on the 20th November (new moon)—this rising in 3 hours is at the rate of 10 feet per hour, equal to 1 foot in six minutes, which is 2

inches per minute. When such a tide rushes into the Bay the current is of course very considerable, and vessels are liable to drift ; during the stillness of the night, the loud rush and roar may be heard for a great distance. There is never, however, anything like a head of water or *bore* in the Narmadá such as is met with in the Hugli, Severn, and other rivers ; this is owing to the great capacity of the estuary of the Narmadá, which forms a sort of beaching basin,—allowing a great body of water to disperse itself over it, before entering the narrower part of the river above Mehgám.

During the monsoon season, the commotion at the entrance of the Narmadá is very great, especially at the first burst, and also at the times when it is flooded with freshes. The waves then rise to a stupendous height, resembling the curling hollow waves common at the same season off Cape Guardafui, and at the L. Agullas Bank, south of the Cape of Good Hope; at such a time none but large well built sea-going vessels are fit to enter the Narmadá and even they would be better away. Once inside the Channel near the inner buoy, about 1½ to 2 miles up the river, ships would be comparatively sheltered except during heavy gales, and even then they would be quite safe off Ambhetá.

The navigation of the Narmadá at all other seasons of the year is perfectly easy for any ordinary vessel with a skilful commander, and steamers would generally be able to make the deep reach above Samaní to within 4 or 5 miles of Bharuch in one tide, and always in two without any difficulty. Sailing ships might require two or even three tides to reach the same point.

The navigation of the river must always however be more or less tidal, that is to say, advantage must be taken of the tides, and long narrow shallow vessels could never make any regular trips irrespective of the state of the tides, because, not answering their helms quickly, they would be liable to snag or run aground on the sand banks below Bharuch and near Mehgám, not for want of a sufficient depth of water, but because the sand banks more or less overlap each other, and vessels must answer their helms very quickly to round the points at dead low water. Sailing ships also in tacking are liable to run aground for the same reason.

Well built vessels, however, which might happen to run aground would sustain no serious damage, as the bed of the river is beautifully even, as shown by the soundings, and it is chiefly fine sand with here and there soft mud.

The sailing directions on entering the river are as follows:

From the Outer Buoy the Light-house at Peram lies S. 85 deg. E. distance 10 miles, and the channel lies N. 56 deg. E. for a distance of 1½ sea miles, where there is an inner buoy in 4 fathoms water L. W. Spring Tides.

From the inner buoy the Channel runs due north towards a beacon 3½ sea miles, beyond this it is well defined by the banks.

A competent captain would always know where to lie to safely for the return tide, in case he was too late to pass up with one flood tide, the first point being the reach off Ambhetá, the second near Venganí, and the last one above Samaní. At any of these parts of the river there is good safe anchorage in deep water at all times of the tide for vessels of 15 to16 feet draught.

The navigable part of the Narmadá might be very materially improved by closing up the creeks or channels on the southern side—just below Bharuch, and the other leading past Hañsot; but any works of this kind might be of a very gradual character, allowing nature to perform as much of the operations as possible, merely enticing the deep part to keep its northern course. A large portion of land might also be reclaimed by closing up these creeks, but if done suddenly, the risk and cost would be considerable, though the end might be quite worth the means; for land of this kind has been reclaimed in parts of England worth 8 millions sterling annually, and in Holland, 300 millions sterling has been successfully spent on such kind of works. So long, however, as there are immense tracts of such land in other places on the Coast, equally valuable, and more easily reclaimed, the wastes on the Narmadá are very likely to remain in abeyance. The two or three shoal places might also be improved by dredging them, after the plan so successfully adopted on the Yara Yara and other similar rivers, namely, by working the dredger at ebb tide only, and simply allowing the sand to drop into the stream, which would carry it away, stirring it up in fact at ebb tide. The necessity for this is not however at present very great, and need only be carried on where there is a large trade to justify the expense, and when vessels drawing a greater depth than 16 feet have to pass up the river, to attempt to remove these banks in order to allow ships to run at dead low water would involve a considerable outlay to very little purpose, so far as the trade at present is concerned.

The navigation of the upper portion of the Gulf of Khambát towards

Gogha, Bhaunagar, and Dholera is not difficult, as there is ample depth of water, and fair anchorage; the further up the Gulf, the greater the tidal influence, until in the Máhi there is quite a head of water or *bore*, and vessels lying at anchor are then very liable to be carried up, and left high and dry, particularly if a prevailing S.W. wind makes the tidal rise and current unusually strong. Vessels would then in all likelihood be taken bodily along on the top of the wave in the same manner as the "Jeddo" was carried on to the Chaul Chado rock, and as more recently the "Carnatic" drifted on to the Shadwan reef—the Captain in both cases being apparently quite unconscious of the enormous velocity of the flood tide which wrecked their vessels.

Off Gogha, the danger is somewhat slightly counteracted by the sheltering effect of the Island of Peram; but even here the sea at times during the monsoon season rolls in with tremendous force; these big tides are however common enough, and dangerous at other seasons than the monsoon. There is, nevertheless, nothing to prevent a suitable landing pier being run out opposite Gogha, if the trade would justify the expense, as such a structure would be much less exposed than those of a similar nature on the Coromandal Coast, off Madras, and on the Pacific Coast off Guatemala as well as at other places.

The present paper does not however pretend to determine what is the most suitable kind of erection required, or whether the present or prospective trade would bear the expense to be incurred. In the Narmadá river no heavy expenditure is now called for, a few buoys being all that is required; these, however, would need to be carefully attended to from year to year, and taken up and re-laid as slight changes in the Channel took place, but even this, it is apprehended, would be very seldom.

APPENDIX.

Sailing Directions.

A large red buoy with basket top has been placed off the entrance of the Narmadá in Lat. 21° 34′ 30″ N. Long. 72° 30′ 20″ east in 7 fathoms at low water spring tides, bearing from Peram Light House 5·85° E. 10 sea miles.

The buoy is ¾ of a mile from the edge of the sands, and is a leading buoy for the channel.

A large red buoy has been placed in the fair way of the channel in 4 fathoms low water spring tides, showing the turn of the river. This buoy bears from the Outer Buoy N. 56° E. 1½ sea miles.

A beacon has been placed on the north bank of the river at high water mark 3½ sea miles due north of the inner buoy.

Sailing Direction for the entrance of the river.

From the Outer Buoy—the east until the Inner Buoy bears NE. by N., then steer for the Inner Buoy passing it to NE. ward. From the inner buoy steer north for the Beacon and along the north bank for the clump of trees marking a temple close to Ambheta. Deep water will be found off Ambheta close to the north bank.

The lowest water found at the entrance of the river at low water spring tides between the buoys was 15 feet. Between the inner buoy and south bank 6 fathoms will be found, and room for a large ship to swing at single anchor.

The entrance of the river requires to be surveyed yearly after the monsoon.

(Signed) J. S. MURRAY,

Commander P. & O. Co.'s Service.

To WILLIAM SOWERBY, ESQ., C.E.,

Executive Engineer, Surat.

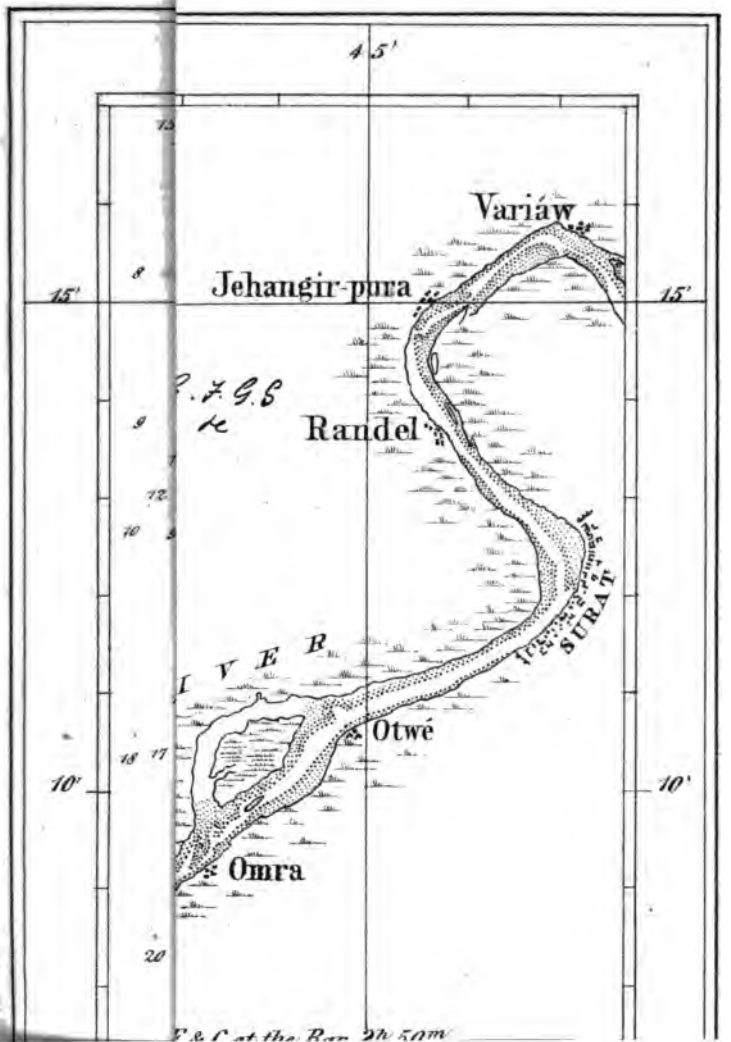
Broach, 26th November 1869.

***REGISTER OF TIDES** of the Narmadá river at Bharoch for the month of November* 1869.

Date.			Time of High Water.		Rise.		Time of Low Water.		Fall.		Remarks.
			H.	M.	Ft.	In.	H.	M.	Ft.	In.	
Nov.	2	Tu.	2	31 A.	1	7	—	—	—	—	
	3	Wed.	4	20 M.	3	8	2	18 M.	1	4	
			5	0 A.	4	2	2	25 A.	3	5	Full Moon 4h. 23m.
	4	Th.	5	25 M.	5	3	2	35 M.	4	0	A. M. on the 4th
			5	35 A.	6	1	2	41 A.	5	0	Bharoch time.

***REGISTER OF TIDES** of the Narmadá river at Bharoch for the month of November* 1869.—*Continued.*

Date.			Time of High Water.		Rise.		Time of Low Water.		Fall.		Remarks.
			H.	M.	Ft.	In.	H.	M.	Ft.	In.	
Nov.	5	Fr.	6	0 M.	8	4	3	18 M.	5	10	
			6	2 A.	7	1	4	3 A.	8	6	
	6	Sat.	6	52 M.	10	0	5	2 M.	6	4	
			7	25 A.	5	1	5	20 A.	9	0	
	7	Sun.	7	52 M.	8	6	5	45 M.	5	3	
			8	15 A.	4	0	5	54 A.	8	9	
	8	Mon.	8	42 M.	8	1	5	50 M.	5	6	
			9	20 A.	6	6	6	58 A.	11	5	
	9	Tu.	9	35 M.	7	6	6	40 M.	9	4	
			10	20 A.	1	10	8	13 A.	10	8	
	10	Wed.	10	48 M.	5	7	7	48 M.	2	9	Third qr. 7h. 43m.
			11	25 A.	2	5	9	46 A.	7	7	A. M. Bharoch time.
	11	Th.	11	15 M.	4	0	9	5 M.	3	1	
			—		—		11	35 A.	5	0	
	12	Fr.	12	45 M.	2	0	11	20 M.	2	6	
			1	20 A.	2	7	—		—		
	13	Sat.	2	15 M.	1	9	0	10 M.	3	0	
			2	46 A.	2	0	0	54 A.	2	1	
	14	Sun.	3	25 M.	1	10	1	35 M.	2	11	
			3	16 A.	2	0	1	54 A.	2	1	
	15	Mon.	3	45 M.	2	7	2	57 M.	1	2	
			4	15 A.	2	9	3	35 A.	1	6	
	16	Tu.	4	32 M.	3	1	3	25 M.	1	10	
			5	5 A.	2	0	3	15 A.	2	3	
	17	Wed.	5	20 M.	3	6	3	45 M.	2	0	
			5	48 A.	2	2	3	51 A.	3	3	
	18	Th.	5	59 M.	5	4	3	58 M.	2	0	
			6	15 A.	3	5	4	6 A.	5	2	
	19	Fr.	6	17 M.	6	3	4	15 M.	3	1	
			6	45 A.	3	9	4	35 A.	6	0	
	20	Sat.	6	42 M.	6	9	4	32 M.	3	8	New Moon 0h. 5m.
			6	48 A.	5	4	4	45 A.	6	5	P. M. Bharoch time.
	21	Sun.	7	2 M.	9	5	5	5 M.	3	7	
			7	25 A.	7	1	4	57 A.	5	9	
	22	Mon.	7	16 M.	9	9	5	20 M.	5	7	
			8	23 A.	6	7	5	18 A.	6	2	
	23	Tu.	7	58 M.	7	2	5	37 M.	4	10	
			9	5 A.	3	4	6	18 A.	3	3	
	24	Wed.	8	55 M.	6	3	6	5 M.	3	8	
			10	19 A.	2	3	7	25 A.	8	9	
	25	Th.	9	56 M.	5	0	7	15 M.	2	6	
			10	25 A.	2	1	7	55 A.	7	0	
	26	Fr.	10	41 M.	4	6	7	49 M.	2	7	First qr. 11h. 2m.
			11	31 A.	1	11	9	28 A.	6	10	P. M. Bharoch time.
	27	Sat.	11	56 M.	4	4	9	45 M.	2	7	
			—		—		10	55 A.	6	11	
	28	Sun.	0	59 M.	1	9	11	20 M.	2	6	
			1	25 A.	4	4	11	49 A.	7	0	
	29	Mon.	2	9 M.	1	9	—		—		
			2	56 A.	2	3	0	53 A.	2	6	
	30	Tu.	3	7 M.	3	5	1	5 M.	3	6	
			3	17 A.	5	10	1	12 A.	4	7	


45'
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I V E R

REGISTER OF TIDES of the Narmadá river at Bharoch for the month of December 1869.

Date.			Time of High Water.		Rise.		Time of Low Water.		Fall.		Remarks.
			H.	M.	Ft.	In.	H.	M.	Ft.	In.	
Dec.	1	Wed.	3	26 M.	9	1	1	15 M.	8	7	
			4	9 A.	6	9	1	49 A.	5	3	
	2	Th.	4	35 M.	8	2	1	55 M.	5	0	
			5	5 A.	7	7	2	37 A.	8	3	
	3	Fr.	5	24 M.	8	4	2	45 M.	7	6	
			5	45 A.	6	3	3	22 A.	8	3	Full Moon 3h. 29m.
	4	Sat.	6	11 M.	7	5	3	52 M.	6	1	P.M. Bharoch time.
			6	28 A.	5	6	4	12 A.	7	9	
	5	Sun.	6	46 M.	9	5	4	15 M.	6	0	
			7	4 A.	7	2	5	1 A.	8	4	
	6	Mon.	7	10 M.	8	7	5	32 M.	7	5	
			8	5 A.	5	2	5	41 A.	7	4	
	7	Tu.	8	21 M.	8	10	6	19 M.	6	1	
			8	55 A.	4	9	6	30 A.	8	8	
	8	Wed.	9	11 M.	6	4	7	10 M.	5	4	
			9	41 A.	4	0	7	25 A.	7	10	
	9	Th.	10	1 M.	6	2	7	54 M.	4	11	
			10	26 A.	4	4	8	15 A.	8	5	First qr. 3h. 59m.
	10	Fr.	11	9 M.	3	11	8	42 M.	3	2	A.M. Bharoch time on
			11	29 A.	3	5	10	4 A.	5	4	the 10th.
	11	Sat.	11	22 M.	5	1	10	8 M.	2	9	
			—		—		11	45 A.	4	7	
	12	Sun.	0	49 M.	2	9	11	32 M.	2	11	
			1	15 A.	4	1	—		—		
	13	Mon.	1	47 M.	2	7	0	8 M.	3	4	
			2	5 A.	3	1	11	58 M.	2	7	
	14	Tu.	3	15 M.	3	0	1	45 M.	3	0	
			—		—		1	29 A.	2	5	
	15	Wed.	3	6 A.	2	8	1	38 M.	2	3	
			3	28 M.	3	3	3	15 A.	2	5	
			4	43 A.	3	9	—		—		
	16	Th.	4	27 M.	5	1	3	6 M.	3	11	
			5	1 A.	2	11	3	1 A.	4	8	
	17	Fr.	5	11 M.	6	2	3	38 M.	3	4	
			5	39 A.	4	5	3	48 A.	5	10	
	18	Sat.	5	53 M.	6	11	3	56 M.	4	7	
			6	0 A.	5	1	4	1 A.	7	3	Full Moon 19th 4h.
	19	Sun.	6	11 M.	9	2	4	9 M.	5	4	38m. A.M. Bharoch
			6	37 A.	5	11	4	21 A.	8	9	time.
	20	Mon.	6	46 M.	9	9	4	42 M.	5	7	
			7	1 A.	8	11	4	54 A.	9	11	
	21	Tu.	7	16 M.	9	3	5	21 M.	7	11	
			7	43 A.	8	2	5	9 A.	10	2	
	22	Wed.	7	37 M.	9	11	5	44 M.	7	9	
			8	46 A.	7	6	5	39 A.	9	5	
	23	Th.	8	20 M.	8	9	5	54 M.	7	0	
			9	15 A.	4	5	6	37 A.	7	10	
	24	Fr.	9	3 M.	6	11	6	21 M.	7	3	
			10	28 A.	3	0	7	35 A.	8	0	
	25	Sat.	10	6 M.	5	10	7	28 M.	3	4	
			10	38 A.	4	6	8	7 A.	7	9	
	26	Sun.	10	52 M.	5	10	7	59 M.	3	3	
			11	45 A.	4	3	9	36 A.	7	4	Third qr. time, 7h.
	27	Mon.	—		—		9	54 M.	3	0	41m P.M. Bharoch time.
			0	9 A.	5	7	11	2 A.	7	1	
	28	Tu.	1	10 M.	4	7	11	39 M.	2	10	
			1	35 A.	4	5	11	57 A.	5	1	

REGISTER OF TIDES of the Narmada river at Bharoch for the months of December 1869 *and January* 1870—*continued.*

Date.			Time of High Water.		Rise.		Time of Low Water.		Fall.		Remarks.
			H.	M.	Ft.	In.	H.	M.	Ft.	In.	
Dec.	29	Wed.	2	18 M.	3	8	1	2 A.	3	1	
			3	4 A.	3	11	1	15 M.	2	10	
	30	Th.	3	17 M.	4	7	1	24 A.	4	5	
			3	28 A.	6	3	1	29 M.	6	0	
	31	Fr.	3	38 M.	7	1	2	12 A.	6	8	
			3	59 A.	6	6					
Jan.	1	Sat.	3	52 M.	9	9	1	59 M.	5	5	
			5	39 A.	3	7	3	15 A.	9	2	
	2	Sun.	5	33 M.	9	8	3	11 M.	4	1	New Moon 4h. 53m.
			6	26 A.	3	5	4	5 A.	7	11	A.M. Bharoch time.
	3	Mon.	6	37 M.	10	5	4	1 M.	5	2	
			7	21 A.	3	7	4	55 A.	8	8	
	4	Tu.	7	27 M.	9	10	4	57 M.	5	3	
			8	5 A.	3	3	5	43 A.	8	5	
	5	Wed.	8	2 M.	8	3	5	39 M.	4	8	
			8	45 A.	2	11	6	25 A.	7	0	
	6	Th.	8	39 M.	7	4	6	2[illegible] M.	4	2	
			9	31 A.	2	10	7	9 A.	6	3	
	7	Fr.	9	29 M.	6	1	7	0 M.	4	0	
			10	7 A.	1	9	7	35 A.	5	0	
	8	Sat.	10	3 M.	4	7	7	31 M.	3	10	
			10	45 A.	1	2	8	22 A.	2	8	
	9	Sun.	10	42 M.	4	9	8	21 M.	4	2	First qr. 10th. 1h.
			11	41 A.	1	0	9	13 A.	1	11	50m. A.M. Bharoch
	10	Mon.	11	35 M.	1	8	9	3 M.	4	1	time.
							10	7 A.	1	3	
	11	Tu.	0	37 M.	1	2	10	5 M.	1	2	
			0	35 A.	1	6	11	2 A.	1	7	
	12	Wed.	1	33 M.	0	11	11	0 M.	1	2	
			1	31 A.	1	4	11	51 A.	1	3	
	13	Th.	2	23 M.	1	9					
			2	29 A.	1	11	0	7 A.	0	9	
	14	Fr.	3	15 M.	2	7	1	5 M.	2	1	
			3	13 A.	2	5	0	59 A.	2	3	
	15	Sat.	4	25 M.	4	11	1	57 M.	2	3	
			4	23 A.	2	11	1	55 A.	3	9	
	16	Sun.	5	21 M.	6	11	2	45 M.	4	0	17th. Full Moon 6h.
			5	20 A.	3	2	2	41 A.	5	9	57m. Bharoch time.

REGISTER OF TIDES of the Narmada River at Mehgam in the month of November 1869.

			H.	M.	Ft.	In.	H.	M.	Ft.	In.	
Nov.	3	Wed.	3	56 M.	6	11	1	22 A.	6	11	New Moon 4h. 28m.
			5	3 A.	6	10					A.M. Bharoch time on
	4	Th.	5	23 M.	5	9	2	27 M.	6	1	the 4th.
			5	23 A.	7	4	2	31 A.	5	7	
	5	Fr.	6	0 M.	9	11	3	26 M.	6	8	
			6	18 A.	8	3	3	50 A.	9	2	

***REGISTER OF TIDES** of the Narmada River at Mehegam in the month of November* 1869—*continued.*

Date.			Time of High Water.		Rise.		Time of Low Water.		Fall.		Remarks.
			H.	M.	Ft.	In.	H.	M.	Ft.	In.	
Nov.	6	Sat.	6	45 M.	11	2	4	45 M.	8	6	
			7	0 A.	13	0	4	30 A.	11	0	
	7	Sun.	7	15 M.	14	0	4	20 M.	13	0	
			7	39 A.	11	4	4	20 A.	14	0	
	8	Mon.	7	54 M.	10	10	4	31 M.	11	2	
			7	58 A.	10	6	5	10 A.	11	1	
	9	Tu.	8	20 M.	10	0	6	16 M.	10	3	
			8	48 A.	9	8	6	43 A.	9	11	
	10	Wed.	9	6 M.	9	5	7	18 M.	9	9	
			9	13 A.	10	1	7	21 A.	9	10	
	11	Th.	10	23 M.	9	7	7	57 M.	9	11	First qr. 7h. 43 A.M.
			10	29 A.	9	8	8	10 A.	9	10	Bharoch time.
	12	Fr.	11	16 M.	9	3	8	16 M.	9	5	
			11	22 A.	[illegible]	5	9	3 A.	9	4	
	13	Sat.					9	34 M.	9	3	
			0	2 A.	8	11	9	47 A.	8	8	
	14	Sun.	0	13 M.	8	7	10	22 M.	8	9	
			1	46 A.	8	2	10	40 A.	8	0	
	15	Mon.	1	50 M.	7	10	11	1 M.	8	1	From 11h. 1m. of
			2	28 A.	8	6	11	11 A.	8	11	the 15th A.M. the low
	16	Tu.	2	34 M.	9	10	11	57 M.	9	8	water remained steady
			3	16 A.	8	11					up to 11h. 14m. A.M.,
	17	Wed.	3	24 M.	10	10	0	4 M.	9	1	and thence commenc-
			3	39 A.	9	7	0	36 A.	10	9	ed to rise, that is
	18	Th.	4	9 M.	10	5	0	49 M.	9	9	the water was station-
			4	6 A.	9	11	1	17 A.	10	3	ary up to 13m., at
	19	Fr.	4	19 M.	12	4	1	23 M.	10	2*	the same time the
			4	26 A.	11	11	1	48 A.	12	3	high water rose up to
	20	Sat.	4	41 M.	13	7	1	53 M.	12	0†	2h. 28m. P.M., and
			4	56 A.	12	4	2	12 A.	13	4	began to fall down at
	21	Sun.	5	21 M.	14	6	2	32 M.	12	4	2h. 44m. P.M. that is
			5	49 A.	13	9	2	54 A.	14	4	the high water was
	22	Mon.	5	47 M.	16	6	3	12 M.	13	10‡	steady for 16m.
			6	10 A.	13	11	3	18 A.	16	5	
	23	Tu.	6	22 M.	14	8	3	33 M.	13	9	*Full Moon Bharoch
			7	12 A.	12	4	4	7 A.	14	6	time 0h. 5m. P.M.
	24	Wed.	7	23 M.	13	10	4	29 M.	12	5	
			8	3 A.	11	5	5	9 A.	13	11	† Time of low water
	25	Th.	8	31 M.	12	9	5	26 M.	11	6	at the mouth of Nar-
			9	13 A.	10	10	6	4 A.	12	10	mada at Buoy 11h.
	26	Fr.	9	28 M.	11	7	6	44 M.	10	4§	20m. A.M.
			10	11 A.	9	8	7	1 A.	11	6	
	27	Sat.	10	47 M.	9	11	8	10 M.	9	9	‡ Time of low water
			11	4 A.	9	3	8	19 A.	9	9	at 0h. 45m. P.M.
	28	Sun.	11	53 M.	9	6	8	46 M.	9	1	
							9	11 A.	9	6	
	29	Mon.	0	21 M.	9	8	9	30 M.	9	9	
			0	32 A.	10	2	9	51 A.	11	0	§Third qr. Moon
	30	Tu.	1	14 M.	10	1	10	34 M.	10	1	Bharoch time 11h.
			1	45 A.	11	6	10	59 A.	11	6	2m. P.M.

REGISTER OF TIDES of the Narmadá river at Bharoch for the month of November 1869.—*Continued.*

Date.			Time of High Water.		Rise.		Time of Low Water.		Fall.		Remarks.
			H.	M.	Ft.	In.	H.	M.	Ft.	In.	
Nov.	5	Fr.	6	0 M.	8	4	3	18 M.	5	10	
			6	2 A.	7	1	4	3 A.	8	6	
	6	Sat.	6	52 M.	10	0	5	2 M.	6	4	
			7	25 A.	5	1	5	20 A.	9	0	
	7	Sun.	7	52 M.	8	6	5	45 M.	5	3	
			8	15 A.	4	0	5	54 A.	8	9	
	8	Mon.	8	42 M.	8	1	5	50 M.	5	6	
			9	20 A.	6	6	6	58 A.	11	5	
	9	Tu.	9	35 M.	7	6	6	40 M.	9	4	
			10	20 A.	1	10	8	13 A.	10	8	
	10	Wed.	10	48 M.	5	7	7	48 M.	2	9	Third qr. 7h. 43m.
			11	25 A.	2	5	9	46 A.	7	7	A. M. Bharoch time.
	11	Th.	11	15 M.	4	0	9	5 M.	3	1	
				—		—	11	35 A.	5	0	
	12	Fr.	12	45 M.	2	0	11	20 M.	2	6	
			1	20 A.	2	7		—		—	
	13	Sat.	2	15 M.	1	9	0	10 M.	3	0	
			2	46 A.	2	0	0	54 A.	2	1	
	14	Sun.	3	25 M.	1	10	1	35 M.	2	11	
			3	16 A.	2	0	1	54 A.	2	1	
	15	Mon.	3	45 M.	2	7	2	57 M.	1	2	
			4	15 A.	2	9	3	35 A.	1	6	
	16	Tu.	4	32 M.	3	1	3	25 M.	1	10	
			5	5 A.	2	0	3	15 A.	2	3	
	17	Wed.	5	20 M.	3	6	3	45 M.	2	0	
			5	48 A.	2	2	3	51 A.	3	3	
	18	Th.	5	59 M.	5	4	3	58 M.	2	0	
			6	15 A.	3	5	4	6 A.	5	2	
	19	Fr.	6	17 M.	6	3	4	15 M.	3	1	
			6	45 A.	3	9	4	35 A.	6	0	
	20	Sat.	6	42 M.	6	9	4	32 M.	3	8	New Moon 0h. 5m.
			6	48 A.	5	4	4	45 A.	6	5	P. M. Bharoch time.
	21	Sun.	7	2 M.	9	5	5	5 M.	3	7	
			7	25 A.	7	1	4	57 A.	5	9	
	22	Mon.	7	16 M.	9	9	5	20 M.	5	7	
			8	23 A.	6	7	5	18 A.	6	2	
	23	Tu.	7	58 M.	7	2	5	37 M.	4	10	
			9	5 A.	3	4	6	18 A.	3	3	
	24	Wed.	8	55 M.	6	3	6	5 M.	3	8	
			10	19 A.	2	3	7	25 A.	8	9	
	25	Th.	9	56 M.	5	0	7	15 M.	2	6	
			10	25 A.	2	1	7	55 A.	7	0	
	26	Fr.	10	41 M.	4	6	7	49 M.	2	7	First qr. 11h. 2m.
			11	31 A.	1	11	9	28 A.	6	10	P. M. Bharoch time.
	27	Sat.	11	56 M.	4	4	9	45 M.	2	7	
				—		—	10	55 A.	6	11	
	28	Sun.	0	59 M.	1	9	11	20 M.	2	6	
			1	25 A.	4	4	11	49 A.	7	0	
	29	Mon.	2	9 M.	1	9		—		—	
			2	56 A.	2	3	0	53 A.	2	6	
	30	Tu.	3	7 M.	3	5	1	5 M.	3	6	
			3	17 A.	5	10	1	12 A.	4	7	

TIDAL OBSERVATION of the Narmada river at Vengani—17th December 1869 to 17th January 1870—continued.

Date.			Time of High Water.		Rise.		Time of Low Water.		Fall.		Remarks.
			H.	M.	Ft.	In.	H.	M.	Ft.	In.	
Dec.	26	Sun.	9	34 M.	13	0	6	28 M.	9	11	Third quarter 7h. 41m. A.M. Bharoch time.
			9	30 A.	8	9	7	0 A.	12	4	
	27	Mon.	11	0 M.	11	10	7	40 M.	9	9	
			11	0 A.	8	0	8	0 A.	12	0	
	28	Tu.	12	22 M.	10	7	9	0 M.	8	6	
							9	28 A.	10	7	
	29	Wed.	12	40 M.	11	11	10	0 M.	11	2	
			1	5 A.	9	8	10	29 A.	9	9	
	30	Th.	1	38 M.	14	0	11	9 M.	14	2	
			2	30 A.	10	0	11	35 A.	9	4	
	31	Fr.	2	45 M.	17	6	0	12 A.	17	2	
			3	30 A.	10	0					
Jan.	1	Sat.	3	50 M.	19	0	0	40 M.	10	4	
			4	5 A.	11	0	1	5 A.	18	10	
	2	Sun.	4	10 M.	19	6	1	15 M.	11	3	New Moon Bharoch time 4h. 53m. A.M.
			5	27 A.	10	4	2	7 A.	20	0	
	3	Mon.	5	55 M.	18	3	2	0 M.	10	6	
			6	5 A.	10	4	2	55 A.	18	0	
	4	Tu.	6	45 M.	18	0	3	15 M.	10	6	
			6	50 A.	9	7	3	45 A.	17	6	
	5	Wed.	6	45 M.	16	0	3	45 M.	9	9	
			7	10 A.	9	1	4	15 A.	16	0	
	6	Th.	7	20 M.	14	2	4	15 M.	9	4	
			8	0 A.	8	9	4	52 A.	14	3	
	7	Fr.	8	0 M.	12	0	4	53 M.	8	6	
			9	0 A.	8	5	6	0 A.	12	0	
	8	Sat.	9	8 M.	11	6	6	12 M.	9	1	
			10	10 A.	8	9	7	1 A.	12	0	
	9	Sun.	10	35 M.	11	0	7	20 M.	8	10	First qr. Bharoch time 2h. 50m. A.M.
			10	43 A.	8	7	7	30 A.	11	0	
	10	Mon.	11	3 M.	10	7	7	51 M.	8	7	
			11	19 A.	8	3	8	22 A.	10	5	
	11	Tu.	0	9 A.	9	9	9	0 M.	8	4	
							9	10 A.	10	0	
	12	Wed.	0	6 M.	8	9	10	0 M.	8	6	
			1	13 A.	9	3	10	10 A.	9	1	
	13	Th.	1	19 M.	9	9	10	32 M.	9	6	
			1	39 A.	8	10	10	40 A.	8	11	
	14	Fr.	1	53 M.	11	4	11	0 M.	11	4	
			2	27 A.	8	5	11	10 A.	8	7	
	15	Sat.	2	23 M.	13	7	11	51 M.	14	0	
			3	3 A.	8	8	Noon.		9	0	
	16	Sun.	3	14 M.	15	8	0	50 A.	15	6	
			4	0 A.	8	9					
	17	Mon.	4	9 M.	16	9	0	51 M.	9	1	Full Moon Bharoch time 7h. 39m.
			4	45 A.	9	5	1	33 A.	16	7	

REGISTER OF TIDES of the Narmada river at Jageshwar for the month—18th January to 17th February 1870.

Jan.	18	Tu.	3	52 M.	20	1	0	40 M.	12	2	
			4	27 A.	12	6	1	17 A.	20	8	
	19	Wed.	4	48 M.	19	0	1	33 M.	12	0	
			4	49 A.	11	10	1	37 A.	19	4	
	20	Th.	5	53 M.	17	7	2	29 M.	11	4	
			5	54 A.	11	5	2	32 A.	17	9	

REGISTER OF TIDES of the Narmadá river at Bharoch for the month of November 1869.—*Continued.*

Date.			Time of High Water.		Rise.		Time of Low Water.		Fall.		Remarks.
			H.	M.	Ft.	In.	H.	M.	Ft.	In.	
Nov.	5	Fr.	6	0 M.	8	4	3	18 M.	5	10	
			6	2 A.	7	1	4	3 A.	8	6	
	6	Sat.	6	52 M.	10	0	5	2 M.	6	4	
			7	25 A.	5	1	5	20 A.	9	0	
	7	Sun.	7	52 M.	8	6	5	45 M.	5	3	
			8	15 A.	4	0	5	54 A.	8	9	
	8	Mon.	8	42 M.	8	1	5	50 M.	5	6	
			9	20 A.	6	6	6	58 A.	11	5	
	9	Tu.	9	35 M.	7	6	6	40 M.	9	4	
			10	20 A.	1	10	8	13 A.	10	8	
	10	Wed.	10	48 M.	5	7	7	48 M.	2	9	Third qr. 7h. 43m.
			11	25 A.	2	5	9	46 A.	7	7	A. M. Bharoch time.
	11	Th.	11	15 M.	4	0	9	5 M.	3	1	
			—		—		11	35 A.	5	0	
	12	Fr.	12	45 M.	2	0	11	20 M.	2	6	
			1	20 A.	2	7	—		—		
	13	Sat.	2	15 M.	1	9	0	10 M.	3	0	
			2	46 A.	2	0	0	54 A.	2	1	
	14	Sun.	3	25 M.	1	10	1	35 M.	2	11	
			3	16 A.	2	0	1	54 A.	2	1	
	15	Mon.	3	45 M.	2	7	2	57 M.	1	2	
			4	15 A.	2	9	3	35 A.	1	6	
	16	Tu.	4	32 M.	3	1	3	25 M.	1	10	
			5	5 A.	2	0	3	15 A.	2	3	
	17	Wed.	5	20 M.	3	6	3	45 M.	2	0	
			5	48 A.	2	2	3	51 A.	3	3	
	18	Th.	5	59 M.	5	4	3	58 M.	2	0	
			6	15 A.	3	5	4	6 A.	5	2	
	19	Fr.	6	17 M.	6	3	4	15 M.	3	1	
			6	45 A.	3	9	4	35 A.	6	0	
	20	Sat.	6	42 M.	6	9	4	32 M.	3	8	New Moon 0h. 5m.
			6	48 A.	5	4	4	45 A.	6	5	P. M. Bharoch time.
	21	Sun.	7	2 M.	9	5	5	5 M.	3	7	
			7	25 A.	7	1	4	57 A.	5	9	
	22	Mon.	7	16 M.	9	9	5	20 M.	5	7	
			8	23 A.	6	7	5	18 A.	6	2	
	23	Tu.	7	58 M.	7	2	5	37 M.	4	10	
			9	5 A.	3	4	6	18 A.	3	3	
	24	Wed.	8	55 M.	6	3	6	5 M.	3	8	
			10	19 A.	2	3	7	25 A.	8	9	
	25	Th.	9	56 M.	5	0	7	15 M.	2	6	
			10	25 A.	2	1	7	55 A.	7	0	
	26	Fr.	10	41 M.	4	6	7	49 M.	2	7	First qr. 11h. 2m.
			11	31 A.	1	11	9	28 A.	6	10	P. M. Bharoch time.
	27	Sat.	11	56 M.	4	4	9	45 M.	2	7	
			—		—		10	55 A.	6	11	
	28	Sun.	0	59 M.	1	9	11	20 M.	2	6	
			1	25 A.	4	4	11	49 A.	7	0	
	29	Mon.	2	9 M.	1	9	—		—		
			2	56 A.	2	3	0	53 A.	2	6	
	30	Tu.	3	7 M.	3	5	1	5 M.	3	6	
			3	17 A.	5	10	1	12 A.	4	7	

IV.—*Index of the Towns, Villages, &c. in the Puṇá Zilla of the Bombay Presidency, with introductory remarks, by* J. Burgess, F.R.G.S., M.R.A.S., Hon. Sec.

The Puna Zilla extends from N. Lat. 17° 54′ to 19° 26½′ and from E. Long. 73° 23′ to 75° 13.′ Its greatest length from the foot of Harischandragaḍ in the N. W. to Wajré on the Nira in the S. E. is 128 miles, and the greatest breadth from Tamani Ghát in the S. W. of Mawal to the N. E. of Shivner is 84 miles. The Sahyádri hills separate it from the Konkan, the principal points from North to South being :—

Mahálshet or Malsej Ghát.
Bhairavagaḍ.
Nánághát.
Jevadhan Fort.
Khapoli Ghát.
Machendragaḍ.
Gorakhgaḍ.
Siddhagaḍ.
Raṇshil or Bhímashankar Ghát.
Kolamba Ghát and Kotligaḍ.
Sálé Ghát.
Kusur Ghát.
Rájmáchi, Manoranjan, Shriwardhan, Kokandarwája.
Hindola Ghát.
Páira Ghát.
Bor Ghát.
Sawa Ghát.
Bhoja Hill.
Wágjaí Ghát.
Sawásni Ghát.
Borap or Sudagaḍ.
Gangaḍ.
Garnolot Ghát.
Landiya Ghát.

The Southern boundary is the Nírá, separating it from Satára and the Phaltan State, and its tributary the Sivagaṅga in the S. W. divides it from the states of the Pant Sachiv of Bhor. On the E. it is bounded by the Ahmadnagar Zilla and part of Solapur, the Bhima forming the line of separation from the southern extremity of the Pábal Táluka to its junction with the Nirá. On the north it is limited by Ahmadnagar. The area of this tract is about 5,250 square miles, and its population probably little short of 750,000.

It is divided into eight Tálukas—

Shivaner or Junír in the N.
Pábal in the N. E.
Kheḍ, W. of Pábal.
Máwaḷ in the W.
Haveli in the S. W.
Bhímathaḍi in the E.
Purandar in the S.
Indápur in the S. E.

The general slope and drainage of the country is to the W.S.W., intersected by rocky ridges which decline gradually towards the east, and here and there gigantic peaks shoot up to a height of between one and two thousand feet crowned with the crumbling ruins of old Maratha fastnesses. Physically it consists of five principal valleys: 1st, that of the Kokaḍi occupying the greater part of the Shívner táluka; 2nd, of the Ghoḍ and its tributary the Mína, which include the Minneher part of Shívner, the Ambegáṅw Petta of Kheḍ, and the north half of Pábal táluka; 3rd, the basin of the Bhíma, which subdivides into those of (1) the Yel in the south of Pábal, (2) the Bhíma in the middle of Kheḍ, (3) the Bám in the south of Kheḍ, (4) the Indrayeni and Andar in the S. W. of Kheḍ, and north of Máwaḷ and Haveli; 4th, the basin of the Muta Mula in Bhimathaḍi and Haveli, dividing in the west into the valleys of the Pauna, in the N. E. of Haveli and Máwaḷ, of the Muta in the south of Máwaḷ, and of the Mula in the south of Haveli; and 5th, the valley of the Kará and other streams in the Purandar and Iṇdápur tálukas.

The Máwaḷ táluka contains 180 Government villages. Its western border, which meets the Tháṇá Zilla on the summit of the Sahyádri Gháṭs, extends along that range for a distance of upwards of 30 miles. On the south it is bounded by the territories of the Pant Sachev, but on the east it is bounded by the Haveli and on the north by the Kheḍ tálukas. In its general features it is very similar to the other Ghát districts; but the hills which intersect it are not, perhaps, quite so extensive as they are in other districts, if we except the Sakurpattar and Supati range on which the forts of Lohogaḍ and Isapur are situated; the valleys also are generally more open and extensive, and far more level. In the district traversed by the railway we have a striking instance of this :—the level plain commences 3 or 4 miles from Khandála, and stretching across almost to the foot of the hills which overlook the old road on each side, it extends to within a short distance of Waḍgáṅw, which is one of the eastern villages of the district. The western parts of the Mahálkari's division (the basin of the Muta) must however be excepted from this description, as the country is perhaps more rugged and undulating in that direction than in any part of the Ghát districts. "The valley of the Muta river," says Col. Sykes, "originating in a mass of hills on the edge of the Gháṭs, is so exceedingly narrow, that for some miles the bases of the opposite hills frequently touch each other, leaving, at intervals, little horizontal plots, of a pistol-shot in

width. These plots occur in terraces, on lower levels as they extend eastwards."*

The hill-country along the verge of the Sáhyádri range, and extending 5 or 6 miles eastwards, is commonly known as Murheṅ (*mist* or *fog*) because it is usually enveloped in mists. To the eastward of this and extending 35 or 40 miles is the Máwaḷ,† this being the western boundary of the upper Maráṭhá country.

The chief products of the Jiráít lands are Náchṇí or *Rágí (Eleusine corocana)* sáṅvá ‡ and til *(Sesamum orientale)* for the kharif or autumn crop, and wheat and gram (or pulse—*Cicer arietinum*) for the rabbí (रब्बी) or spring crops. Bájrí or millet (*panicum spicatum*) and jawárí (*holcus sorghum*) are cultivated to a small extent in a few villages on the eastern border. Black soil lands are only suited for rabbí or spring crops. Rice is the crop from which the cultivators pay their revenue. It is for the most part sent to the Puṇa market. Some little goes below the Gháṭs, and a small portion is kept for retail sale at the great halting places along the line of road, of which Waḍgáṅw and Khandála are the chief. Manure is not applied to any lands in this district, except that which they receive from the process of burning brushwood and grass—a practice which is confined to the spots on which the young plants of rice, náchní, &c., are raised for the purpose of transplantation. Though it is a rice-growing district throughout, there is a considerable difference of the climate, indicated by the variation in the rainfall in different parts, the amount being much greater in the immediate vicinity of the Gháṭs than in the eastern parts.§

"With respect to the present condition of the cultivators," says Captain Francis, writing in 1854, "I regret to say I cannot speak favourably of it. The villages along the Bombay road are filled with Márwáḍis, who have managed to get the great body of them deep in their books, and to such an extent that I am afraid they are more oppressed with debt in that part of the Mámalatdár's division than in

* Carter's Geolog. Papers on Western India p. 92.

† From "mávalane" to set.

‡ Panicum miliaceum, (Rox.) is *Wari Sánvá*,
Panicum frumentaceum, (Rox.) is *Sánvá*, and
Panicum miliare (Lam.) is *Nella Shama*, *Tel.*

§ Selections from the Records of the Bombay Government No. LXX. p. 13. The preceding and several of the following paragraphs have been taken with only a few verbal alterations from this publication.

any other district of the Collectorate.....He or his agent may generally be seen lurking about the ryot's stackyard when any thrashing is going on, ready to step in and carry off the promised portion of the produce."*

The Pálnúk† tenure, which is in effect a reduced rate of assessment on lands cultivated by Bráhmaṇs and other influential classes, obtains only in the Mahálkarí's division of the Máwaḷ táluka, where it appears to have long existed; "and," says Mr. Pringle (in his report of 6th September 1830), "the concurrence of the ruling power may be inferred from a *sanad* of one of the early Rájas of Satára, in answer to a petition which appears to have related to this subject, confirming in general terms such privileges as the petitioners were entitled to by usage. The names of the persons holding under this tenure, and the extent of their lands seem occasionally to have varied; but it is not clear whether the privilege was understood to extend to whole classes or only to individuals, and whether, as regarded the land, it was general or confined to specific portions," but "it may be fairly presumed that there was some limitation, expressed or implied, to a claim which might otherwise have gone to reduce the whole revenue of the country." The number of pálnúkdárs in 1830 was 196; the full amount of their survey assessment was Ankusi Rs. 8,673, and the reduction Rs. 3,662, or current Rs. 3,510, and in 1854 it was Rs. 3,186.‡

The whole of the assessed lands in this táluka amount to 95,398 acres.

The SHIVANER or Junnar táluka has been subdivided for the management of its revenue and magisterial affairs into three divisions, Junír, Brahmanwáḍi, and Bori peṭhas, the first containing the tarfs of Haveli or Junír, Maḍkhoré, Minneher, and Kokaḍneher.

As in Máwaḷ, "numerous spurs forming distinct ranges of hills diverge from the Gháṭs on the west at right angles to the main range, and extend for many miles in an easterly and south-easterly direction, diminishing in height as they recede from the Gháṭs. The most important of these ranges is the northern one, bounding for some distance the Puṇá and Ahmadnagar Zillas, and on which the strong fortress of Harischaṅdragaḍ is situated." The area of the tableland on the summit of some of these spurs, says Col. Sykes,§ "often exceeds that of the valley between them: such is the

* Ib. pp. 6-7. † Maráṭhá पाळनूक. ‡ Ibid pp. 10-12.

§ Carter's Geological Papers on Western India pp. 91, 92.

case with this spur bordering the left bank of the Bhíma river for forty miles from its source, occupying, in fact, the whole country between the sources of the Bhíma and Ghoḍ rivers. The spurs are rarely tabular for their whole length, but narrow occasionally into ridges capped with compact basalt, and subsequently extend into extensive table-lands. The spur originating in the hill-fort of Harischandragaḍ affords a good example. The fort is about eighteen miles in circumference: on the east it presents a salient angle to the neighbouring mountain; absolute contact, however, only commences at about 400 feet from the top of the scarp, leaving a gap and an extremely narrow ridge, over which lies a difficult foot-path of communication between the valley of the *Málsej* Ghát and that of the *Mul* river, the spur then widens; some lateral ramifications shoot out, on one of which is situated the fort of Kunjargaḍ; at the Brahmanwáḍi pass it narrows considerably, but not into a ridge; it subsequently expands into the well-peopled table-land of Kanur and Parner, twenty-four miles long by twenty broad, having diminished in height by a succession of steps from 3,894 at Harischandragaḍ to 2,866 at Brahmanwáḍi, 2,474 at Parner, and 2,133 on the terrace of Ahmadnagar. From Ahmadnagar the spur bends southward until it is finally lost in the neighbourhood of Solápur. It is in fact the margin of a great plateau, which has a mean elevation of about 300 feet above the valley of the Godávari, and over which the rivers Ghoḍ, Bhíma, Sina, &c. take their course. The basaltic caps of the ridges appear more or less columnar, from numerous vertical fissures; the weathering of these exposed rocks produces pillars, spires, towers, houses, and other forms of works of art. Another feature of these spurs is the occasional appearance on their table-lands of small hummocks or conical hills with a truncated apex."

South of the great spur just described is the valley of the Málsej Ghát,—"several miles wide, and literally as level, even to the brink of the Gháts, as if smoothed by art."*

Further south than this and running parallel to the first range "are two smaller spurs, separated from each other by the narrow valley which forms the approach from the Dakhan to the Náná Ghát." These are neither so lofty nor extensive as the more northern range. They are continued in an easterly direction for about fifteen miles, and then disappear somewhat abruptly near the town of Junír.

*Sykes ut sup. p. 93.

To the south of these is a further range bounding this district and the Kheḍ taluka, and extending beyond Mahálunga in Pábal.*

"Each of these valleys," continues the Report, "forms one of the old divisions of the táluka known as the *Minneher*, *Kukaḍneher*, and *Maḍkhore* tarfs; the two former evidently owe their designation to the rivers *Mina* and *Kukaḍi*, which have their source in the gháṭs at the head of them, and the latter probably takes its name from *Maḍh*, which is the chief place in the tarf. Besides the above rivers there is a smaller one called the *Pushpávatí* which rises near the Málsej Gháṭ, flows through the bed of the *Maḍkhore* valley, and then forms a junction with the *Kukaḍi* near the village of *Hivra*." The *Mina* and *Kukadi* take a south-easterly direction, maintaining rather a singularly parallel course through the district. The former flows along the southern boundary of Junír, and thence passing into Pábal táluka joins the Ghoḍ river near Pargáṅw. The *Kukaḍí* is also a tributory of the Ghoḍ, joining it about five miles above Sirur in the Ahmadnagar Zilla.

The Shivaner táluka "on the extreme western border is very rugged and precipitous, the surface of it being so much intersected by ravines that the ordinary method of cultivating with bullocks and plough is found to be generally impracticable, and a system of manual tillage is substituted for it, commonly known as *dallí* cultivation. This, however, is peculiar to the region or locality of the gháṭs, for, as we proceed eastward, the hills diminishing in height, widen out on both sides, and as the breadth of the valleys thus increases, so does the country become proportionately more level and cultivation more general. Proceeding onward in an easterly direction, we emerge from the bed of the valleys and enter the fine plain of the Haveli tarf, extending from the town of Junír on the west to the borders of Bori-peṭha on the east. This tract of country is distinguished for the fine climate it enjoys as well as for the fertility of its soil, and the happy combination of these two circumstances has rendered it remarkable as one of the richest spots in the whole of the Dakhan. Nowhere in the Puṇá Zilla is the fall of rain so genial and so certain as in this favored spot, and nowhere else is the growth of wheat and other grains more prolific. At the corner of this beautiful plain, and directly at the mouth of the valley leading to the Náná Gháṭ, stands the old town of JUNNAR, the capital of the Dakhan when the Musalman held sway over it, located, as

* Selections ut sup. p. 68.

Lieut. Nash says, "in a most lovely country, surrrounded by most fertile lands, cool in climate and well situated for military purposes, the choice of Junír as their chief city along the *Gháṭs* speaks much for the taste and judgment of the men who founded it." It is greatly fallen in size and importance since the time of the Muhammadan rule and by the subsequent transfer of the seat of Government to Puṇá under the Maráṭhas, still it is a place of considerable note, being the chief market of the district," and till the opening of the railway it continued to be a depôt for the merchandise and grain passing to the Konkan by the Náná Ghát.

In the western districts of this táluka "we have a scanty population, remarkable for their hardy character as well as for their simple habits of livelihood. The houses are generally small *chappared* (thatched) sheds, and the whole community of a village often falls short of thirty souls. Luckily their wants and requirements are of the commonest kind, for few artificers and traders are to be met with in these mountainous wilds, and even those that have houses there generally leave them for Junír during the monsoon season." The Haveli villages "on the other hand are well populated, the houses comparatively well built, the village community complete in all the usual branches of handicraft, and living in an advanced state of civilization compared with that of their Máwaḷi brethren."*

On the western border, where the fall of rain is most copious, we find rice to be the staple product, whilst the dry-crop cultivation is entirely confined to the inferior kinds of grain, such as *Náchaṇi*, *Sáṅwá*, *Khorasni*, &c., and so much is the soil deteriorated and exhausted by the excess of moisture in this locality, that a rotation of these crops can be grown on the same spot for only 3 or 4 years successively, the land then requiring a fallow for the same or a longer period. The first circumstance that attracts our attention as indicative of a change from this climate is the disappearance of the *pherpali* cultivation and the partial introduction of wheat, gram, and *bájri* amongst the dry-crop products. We next note the cultivation of rice to be gradually diminishing, and with it that of the inferior kinds of grain. Lastly, we find ourselves in the fine plain of the Haveli tarf surrounded only with crops of wheat, gram, and bájrí. The two great markets of the district are *Junnar* and *Votur;* besides these there is *Naráyángánw*, close to the borders of the Shivaner táluka. Of these Junnar is the chief.

* Ibid pp. 70, 71.

Between the Máwaḷ and Shivaner talukas lies that of KHEḌ, in general physical characteristics much resembling the last táluka. For revenue purposes it is divided into three :—1, The mamlutdar's division including the old tarfs of *Kheḍ* and *Chákan;* 2, Khoḍé peṭha, including the tarfs of *Wáḍe* and *Andar Máwaḷ;* and 3, *Aṁbegáṅw peṭha*, including *Ghoḍ* and *Áṁbegáṅw* tarfs.

The *Ghoḍ* valley, from the source of the river near *Ahupe* to *Manchar* in the Pábal táluka, is exceedingly narrow and tortuous. There it expands into the broad horizontal plain of Kautá, 10 miles wide. In its upper course the river drains the whole of the Aṁbegáṅw peṭha.

The next valley on the south is that of the *Bhíma* in the Wáḍe tarf. The river rises at the Ranshil or Bhimashankar Ghát at a height of 3,090 feet above the sea level, "and within the first few miles it tumbles over several terraces." The valley for 18 miles is occasionally so narrow that the bases of the opposite hills almost touch each other.

The valley of the *Bám* river commences about seven miles from the crest of the Gháṭs, at a point where the mountain masses separate into two spurs. Hence it continues level for 14 miles, gradually widening eastward. The river Bám runs down the valley at a level of 150 feet below that of the cultivated lands,—these lands in fact, being upon one terrace, and the river on a second and lower one.

The neighbouring valley of the *Andar* river presents a perfect contrast to that of the Muṭá in Máwaḷ. "It is level for 20 miles, running east and west to the very edge of the Gháṭs; and a person can stand at the head of the valley upon the brink of a scarp rising almost from the Konkan. Here at the source of the river, it is nearly six miles wide." The Andar river, like the Bám, runs at a level of 150 feet below the cultivated lands.

The other tálukas do not present much requiring special notice. Separating Haveli and Bhíma thaḍi from Purandar is a spur from the Gháṭs, on which are situated the forts of Siṅhagaḍa (4,162) and Malhargaḍ, and on a branch of it Purandhar 4,472 feet and Vazirgaḍ adjoining Purandhar, at nearly the same elevation. This spur has an extent of 95 miles.

IṄDÁPUR táluka is distinguished for the precariousness of its climate, which is drier than that of Satára, the average rain-fall being rather less than six inches per annum. Of this taluka, exclusive of Karyat-Baramati, the total area is 364,056 acres. For it we have a census taken in 1865-66 which has been used in the following Index.

The Kunbis or Shudra cultivators of this and the neighbouring collectorates of Ahmadnagar, Solapur, and Satára, &c., are Maráṭhas, specially so called, as distinguished from the Deshast Bráhmans, and from the Parwáris or low castes.

In the following list, the names of the towns, &c. are arranged alphabetically, as transliterated from the Devanágari which immediately follows. Where any usual form of writing the name differs materially from that first given, it is inserted in italics; and all such vulgar forms are again inserted in their proper alphabetical position with references to the more correct forms. After the name of the town follow those of (1) the *tarf*, and (2) the *Táluka*, in which the place is situated. The populations are from the returns of 1846, except in the case of the Indápur Táluka, for which the returns were made in 1866. The latitudes and longitudes are those of the Great Trigonometrical Survey Sheets 25, 38 and 39. In the transliteration व has been represented indifferently by *w* or *v* according as it is usually pronounced, श is represented generally by *sh* or *s'*, whilst *ṣh* would be put for ष.

TOWNS, &c., IN THE PUṆA ZILLA.

'Aḍawiré आडिवरे, tarf—Aṁbegáṅw, Táluka—Kheḍ,—population 125 Lat. 19° 9′ N., Long. 73°45′ E.

'Aḍé आडे, on the Pavana, Pavan-Máwaḷ, Máwaḷ,—an Inam village,—128 . . . . . 18 42 73 40

'Aḍé अडे, *Areh*, Wáḍe, Kheḍ 18 57 73 38

'Aḍgáṅw आडगांव, Wáde, Kheḍ,—an Inám village, paying Rs. 35-15-7 as Mokasa Nemṇuk,—227 . . . . . 18 55 73 43

'Aḍgáṅw, Pauḍh-Khore, Máwaḷ,—81 . . . . . 18 32½ 73 27

'Aḍhaḷe Khurd, आढळे खुर्द, *Audhula*, on the Irola, Pávan-Máwaḷ, Mawaḷ—Lapsed to Government in 1841,—145 . 18 39 73 41

Agar अगर, on the Kukaḍe, Haveli, Shivăner,—413. 19 12½ 73 57

A'gháṇe आंघाणे, Aṁbegáṅw, Kheḍ 19 11 73 46½

Agḷambe अगळंबे, Karyat-Máwaḷ, Havelí,—Lapsed to Government in 1842-43,—549 . . . . . 18 26 73 47

Agotí आगोती, on the Bhíma, t. and T. Iṅdápur,—541 18 14 75 1½

Ahíre अहीरे *Uheera*, Karyat-Máwaḷ, Haveli,—an Inam village; pop. 918 . . . . . 18 27 73 41

Ahire अहिरे *Uheera*, Wáḍe, Kheḍ,—has a market every Friday,—261, See *Thornton*, Gazetteer, s. v. 'Hewra.' Lat. 18° 52½′ N., Long. 73° 45′ E.

Ahírawáḍi अहिरवाडि, on the Kwet, Pauḍh-Khore, Mawaḷ,— 18 31½ 73 31

Ahírawáḍe,—*Aheerowda*, Náṇe-Máwaḷ, Máwaḷ . . 18 44 73 38

'Ahupe आहुपे *Ahoopeh*, Aṁbegáṇw, Kheḍ,—371. . 19 10 73 36

Ajotí अजोती *Ajhotee*, on the Bhíma, t. and T. Indápur,—206. 18 10½ 75 9½

Akhatulí अखतुली, on the Bám, Wáḍe, Kheḍ . . 18 55½ 73 40½

Aklápur अकलापुर, Belhe, Brahmanwáḍa,-peṭha, Shivaner,—557. . 19 17 74 17

'Akolé आकोले *Aukoleh* on the Mula, Pauḍh-Khore, Máwaḷ,—187. . 18 32 73 38

'Akolé आकोले Akole, t. and T. Indápur,—674. . 18 12½ 74 49

'Akurdí आकुरडी, on the Indrayáni, Chákaṇ, Kheḍ. 18 46 73 44½

Akurḍí अकुरडी t. and T. Havelí—an Inam,—394 . 18 39 73 50½

'Aḷandí आळंदी *Alundee*, on the Indráyani, Chákan, Kheḍ,—an Inam, paying Rs. 5-1-10 on account of deshmukhi nemnuk. Market every day,—1418. . . . . 18 40½ 73 57½

Aḷandí अळंदी *Allundee* Sánḍus, Bhimathaḍi.—Lapsed to Government in 1826-27,—1018 . . . . . 18 2[illegible] 74 8

Aḷé अळे *Alleh*, Aḷe, Bori-Peta, Shivaner,—Jatrá on Chaitra Shuddha 11th in honour of Mhasobá. Market on Fridays. A Saranjám, paying Rs. 36-14-10 to Government on account of the attached Watan. *Thornton*, Gazetteer,—'Alleh.'—3012. 19 10 74 11

'Aḷegáṇw आलेगांव, *Allehgaon*, on the Bhíma, Pátus, Bhimathaḍí—an Inam village,—193 . . . . . 18 27 74 42½

Alleh v. Aḷé.

Allundee. v. 'Aḷandi.

Almé, अलमे *Alma*, Havelí, Shivanér,—320 . . . 19 16 73 57½

Aḷú, अळू, Havelí, Shivaner 19 18 74 0

Alundee v. Alandi.

Amarápûr, अमरापूर, Havelí, Shivaner. 19 12 73 57

'Ambaḍweṭ आंबडवेट, *Amburweet*, Pauḍh-Khore, Mawal,—702. . 18 31½ 73 43

'Aṁbaḍe आंबडे, *Amreh*, Aṁbegáṅv, Kheḍ,—pop. 138,
Lat. 19° 9′ N. Long. 73° 45′ E.

'Aṁbavaṇé आंबवणे, Pauḍh-Khore, Máwaḷ,—103. 18 37 73 26

Aṁbé अंबे, Minneher, Shivaner. 19 11½ 73 45

'Aṁbegáṅw आंबेगांव, on the Ghoḍ, Aṁbegáṅw, Kheḍ ; Market every Tuesday, ... —643 . 19 6½ 73 47½

'Aṁbegáṅw, on the Pavana, Pavan-Máwaḷ, Máwaḷ ; Market every Wednesday except during the monsoons,—775 . 18 40½ 73 32½

'Aṁbegáṇw Budrukh आंबेगांव बुदरूख, Karyát-Máwal, Haveli,—306. 18 26 73 54

'Aṁbegáṅw Khurd आंबेगांवखुर्द, Karyát-Máwaḷ, Havelí—a Saranjam village, ... —395 . 18 26½ 73 53½

'Aṁbegáṅw, Muté-Khoré, Havelí,—603 .

Ambegavháṇ अंबेगव्हाण, Votúr, Bráhmaṇwáḍá-peṭá, Shivaner,—583. 19 19 74 3½

Ambeṭháṇ अंबेठाण, Chákaṇ, Kheḍ, . —468 . 18 46½ 73 52½

Aṁbhoḷ अंभोळ, near the Muḷá R., Votúr, Bráhmaṇwáḍá-peṭa, Shivaner, —379 . 19 26 73 59

Aṁbhú अंभू, *Umbhoo*, Wáḍe, Kheḍ, . —178 . 18 55½ 73 38½

Aṁbí अंबी, on the Kos, Karḍe, Bráhmaṇwáḍá-peṭa, Shivaner,—282. 19 15½ 74 11

Aṁbí, on the Muḷá, Bráhmaṇwáḍa-peṭá, Shivaner, . 19 20 74 14

'Aṁbí आंबि, Mosé-Khoré, Havelí—an Inám,—556. 18 21½ 73 44

Aṁbí अंबी, on the Indrayeṇi, Chákaṇ, Kheḍ,—Lapsed to Government in 1828-29, ... —374 . 18 46 73 44

Aṁbí Budrukh अंबी बुदरूख, on the Kara, pargaṇá—Supe, Puraṅdar,—an Inam village, Rs. 10-8-10 is paid on account of Dasrá Sankránt, ... —226 . 18 18 74 20½

Aṁbí Khurd अंबीखुर्द, on the Kara, pargaṇa—Supé, Puraṅdar,—355,— 18 17½ 74 20½

'Aṁbḷé आंबळे, Karepaṭár, Puraṅdar,—an Inám village, paying on account of Mokásá and the Nemṇuks of Chákar Máne and Najarbheṭ. —620 . 18 24 74 13

'Aṁblé, Chákaṇ, Kheḍ,—of Isafut service ; Rs. 50-3-7 is paid on

account of Mokásá Némṇuk and the proceeds of the farm of pasture land, ... pop. 102 Lat. N. 18° 49′ Long. 73° 43′ E.

'Aṁboḍí आंबाडी, Karepaṭár,-Puraṅdar.—Lapsed to Government in 1845-46, ... —88 . 18 21 74 6

Aṁbolí अंबोली, on the Bám, Wáḍé, Kheḍ,—414 . 18 56 73 40

Aṁbolí, Minneher, Shivaner, ... —306 . 19 14 73 46

Amburweet v. Ambaḍveṭ.

'Amoṅḍí आमोंडी, Ghoḍé, 'Aṁbegáṅw, Kheḍ,—725 . 19 5½ 73 53½

Amreh v. Ambaḍé.

Anawaḷé अनवळे, *Unnowlee*, on the Bám, Wáḍé, Kheḍ,—178. 18 53 73 43

Aṅdar River अंदर, rises near Savlá Ghát, Kheḍ . 18 57 73 32

and joins the Iṅdráyeṇí . . . 18 45½ 73 43

Aṅdesé अंदेसे, Pauḍh-Khore, Máwaḷ, —352 . 18 30½ 73 38

Aṅdrav अंद्रव, Andar-Máwaḷ, Kheḍ—an Inám village, 18 52½ 73 34½

Aṇé अणे; *Anna*, Belhe, Bori-peṭa, Shivaner,—2,000. 19 10 74 18

'Aṅjangáṅw आंजनगांव, on the Kará, Karepaṭár, Puraṅdar,—448. 18 12 74 34

Aṅjanveḷ अंजनवेळ, Kukaḍneher, Shivaner,—122, 19 18 73 47

'Aṅksai आंकसइ, *Uksaee*, on the Muṭá, Pauḍh-Khore, Máwaḷ,— 110 . 18 [illegible] 73 30½

Anna, v. Aṇé.

'Ansuṭé आनसुटे, *Ansoota*, Aṅdar-Máwaḷ, Kheḍ,—96. 18 54½ 73 36

Aṅtroli आंत्रोली, Kánada-Khore, Haveli, a Saranjám—503.

'Aṅvḍhe-Budrukh आंवढे बुदरूख; *Aundeh-b.*, Náṇé-Máwaḷ, Máwaḷ,— 318 . 18 48½ 73 30½

'Aṅvdhe-Khurd आंवढे खुर्द, Náṇe-Máwaḷ, Máwaḷ,—243. 18 43½ 73 30½

'Aṅwḍhéṅ आंवढें, *Awundeh*, Wádé, Kheḍ,—356. . 18 57 73 40

Aṅwaḷas अंवळस, *Awalus*, Pauḍh-Khore, Máwaḷ, 558. 18 32½ 73 28

Aoopeh v. Ahupé.

Apṭáḷé अपटळे, Minneher, Shivaner, —116 . 19 13 73 50

'Apṭí आपटी, Ghoḍé, Kheḍ, ... —80 . 19 7½ 73 52

'Apṭí, t. and T. Pábaḷ,—358.

टी, Hirḍas-Máwaḷ, Haveli, a Saranjám,—pop. 1034,
Lat. 18° 40′ N. Long. 74° 5′ E.
the Páwaná, Pavan-Máwaḷ, Máwaḷ,—266. 18 41½ 73 30
भार्डोव, *Ardow*, on the Páwaná, Pavan-Máwaḷ, Máwaḷ,—66.
18 41½ 73 36
.ḍé.
रवी, Kheḍé-Báré, Haveli, . . —475. 18 21½ 73 52½
it, Haveli 18 22 73 52
र्वी, on the Mina, Náráyaṇgáṅw, Haveli, Shivaner,—1265.
19 8 74 1
ासाणे, Aṁbégáṅw, Kheḍ, . . —485. 19 10½ 73 43½
भासंदे, *Asdeh*, on the Muḷá, Pauḍh-Khore, Máwaḷ,—
243. 18 32½ 73 37½
. Askheḍé.
आष्टापुर, on the Muṭá-Muḷá, Sánḍas, Bhimathaḍí,—562.
18 33 74 11
Budrukh असखेडे बुदरूख *Ashkeer-b.*, on the Bám, Chákaṇ,
–an Inám village, ... —174. 18 49 73 50
Khurd असखेडे खुर्द, near the Bám, Chákhan, Kheḍ,—a
m village, —119. 18 49 73 49½
आथुर्णे, *Athoorne, Atoorna*, or *Hatoorneh*, t. & T. Iṅdápur,
—898. 18 5 74 52
. 'Aḍhaḷé.
. 'Akolé.
. Aṅvḍhé.
ाउंध, *Awund*, near the Muḷá, t. & T. Haveli,—an Inám
; it contains a handsome Hindu temple, *Hamilton*, Gaz.—
; *Lord Valentia*, Voy, and Trav. vol. II. pp. 102, 137;—1008.
18 33½ 73 52½
भवदर *Awudur*, Wáḍé, Kheḍ, . —374. 18 56½ 73 45
ाव्हाट, on the Bhimá, Wáḍé, Kheḍ—467. 19 1 73 45
i आवंढोली, Náṇé-Máwaḷ, Máwaḷ, —79. 18 43½ 73 31
ur अवरंगपुर, *Owrungpoor*, Aḷé, Bori-Peṭa, Shivaner,—
m, ... —110. 19 3½ 73 12½
hurd अवसरी खुर्द, Avsari, Pábaḷ—2,443. 18 57½ 74 4½

Avsarí Budrukh अवसरी बुदरूख, Avsarí, Pábaḷ,—pop. 2,197.
Lat. 18° 58′ N. Long 74° 2′ E.

Awulus v. Aṅwaḷas.

Awund v. 'Auṅdh.

Awundeh v. Aṅvḍhéṅ.

Bábhulgáṅv बाभुळगांव, *Baboolgaon*, on the Bhimá, t. and T. Iṅdápur, —343. 18 3 75 8½

Baeelsur, v. Belsar.

Bádgí बादगी, *Budge*, Belhé, Bráhmaṇwáḍá-Peṭa, Shivaner,—96. 19 17 74 6½

Bágáit Budrukh बागाइत बुदरूख, on the Kukaḍe, Haveli, Shivaner, —552. 19 13 73 57

Bágáit Khurd बागाइत खुर्द, on the Kukaḍe, Haveli, Shivaner,—362. 19 13½ 73 56½

Báglohoré बागलोहोरे, on the Mina, Haveli, Shivaner. 19 10 73 54

Bagree v. Bhágḍí.

Bahúḷ बहूळ, *Bahool*, on the Bhimá, t. and T. Kheḍ,—678. 18 43 74 4

Bahuli बहुलि, Muṭé-Khoré, Haveli, . . —847. 18 26 73 43

Bálevádí बोलवाडी, on the Muḷá, t. & T. Haveli,—361. 18 34½ 73 50½

Ballálvádí बल्लाळवाडी, Haveli, Shivaner, —357. 19 15 73 58½

Balpuḍi बळपुडि, *Bulpooree*, t. and T. Iṅdápur,—78. 18 10 74 59½

Báṁbharḍé बांभर्डे, Pauḍh-Khoré, Máwaḷ,—185. 18 33 73 26

Bamboorda v. Bháṁbavḍé.

Báṇeré बाणेरे, on the Muḷá, t. & T. Haveli—an Inám;—Rs. 445—5-2 paid for the Mokásá Bábti Nemṇuk, . . —621. 18 33½ 73 51

Bápoḍí बापोडी, *Bapooreé*, t. & T. Haveli, . —330. 18 34 73 54

Bárámatí बारामती, on the Kará, Karyát-Bárámatí, Iṅdápur.—Lapsed to Government in 1845-46; *Thornton*, Gazet.—'Baramuttee'; *Grant Duff*, vol. I. pp. 124, 134 . . . . . —882. 18 9 74 37½

Báraw बारव, Haveli, Shivaner 19 12 73 56

Burháṇpur बुऱ्हाणपुर, Supé, Puraṅdar,—403.

rpé Budrukh बार्पे बुदरुख, on the Muṭá, Pauḍh-Khore, Máwaḷ,—pop. 102. Lat. 18° 33½′ N. Long. 73° 28′ E.

stí बस्ती, on the Mina, Mahálunge, Haveli, Shivaner,—136. 19 8 73 58

vaḍ (Kasbá) बावड, *Bawud*, t. and T. Indápur—its hamlets are Gaṇeshwáḍi, Kacharwáḍi, Píṭewáḍi, Lakhewáḍi, Bhoḍṇiwáḍi, and Surwaḍwáḍi; *Thornton*, Gaz.—'Bhowreh.'—3811. 17 58 75 3½

vadhán Budrukh बावधान बुदरुख, *Bawdhan*, on the Ráma Nadi, t. and T. Haveli; an Inám,—Rs. 198-9-0 paid for Sar-Deshmukh and Mokásá Nemṇuk, ... —547. 18 31 73 50½

vadhán Khurd बावधानखुर्द, on the Ráma Nadi, Karyát-Máwaḷ, Haveli, ... —183. 18 31 73 50

baḍvohaḷ बेबडवोहळ, on the Pávaná, Pawan-Máwaḷ, Máwaḷ,—196. 18 41½ 73 42

ḍsé or Beḍsa बेडसे, *Birsa*, Páwan-Máwaḷ, Máwaḷ; an Inám, —Rs. 16-12-7 is paid as Sar-Deshmukhi Nemṇuk; there are Buddhist caves in the hill above the village; *Jour. Bomb. Br. As. Soc. vol.* I. pp. 438-43; vol. III. pt. II. pp. 53.—239. 918 43 73 36½

eḍsing बेडासिंग, *Behrsing*, t. & T. Indápur,—93. 18 3 75 6

ehla v. Belhé.

ehlowree v. Belavḍé.

ekorí बेकोरी, *Bukowree*, Sánḍas, Bhimathaḍi; Rs. 38-5-11 is paid for Nemṇuk Mokásá and Chákar Máné Báb;—180. 18 35½ 74 7

ilajh बेलझ, *Beyley*, on the Andar, Náné-Máwaḷ, Máwaḷ,—129. 47½ 73 41½

lápur बेलापुर, on the Kos, Votúr, Bráhmaṇwáḍá-peṭa, Shivaner,—835. 19 18 74 9

lhé बेल्हे, *Behla*, Bori-Peṭá, Shivaner; a Saranjám village,—Market on Mondays,—*Thornton*, Gazet. 'Behlá';—1940. 19 7 74 15

lsar बेलसर, on the Miná, Minneher, Shivaner,—330. 19 11 73 53

elsar बेलसर, *Baeelsur*, on the Kará, Karyát-Sáswaḍ, Purandar, —1323. 18 18½ 74 11

elvaḍé बेलवडे, *Behlowree*, Pauḍh-Khoré, Máwaḷ,—368. 18 29 73 39

Bhádalwáḍí भादलवाडी, t. & T. Iṅdápur,—pop. 192.
Lat. 18° 14′ N. Long. 74° 49½′ E.

Bhádas Khurd भादसखुर्द, *Bhadus* (*k.*), Pauḍh-Khoré, Máwaḷ,—162.
18 31 73 33

Bhádas Budrukh भादसबुदरूख, Pauḍh-Khore, Máwaḷ;—an Inám village, ... —345. 18 33 73 36

Bhaḍavlí भडवली, *Booroolee*, on the Pávaná, Náné-Máwaḷ, Máwal, —an Inam village, ... —71. 18 41 73 35½

Bhágḍí भागडी, Karḍé, Bori-peṭá, Shivaner,—259. 19 1½ 74 12

Bhájé or Bhájá, भाजे, Náṇé-Máwaḷ, Máwaḷ;—an Inám village,—Rs. 1-10-10 paid on account of Watan-Japti Nemṇuk;—Bauddha Caves in the neighbouring hill;—*Jour. Bomb. Br. R. Asiat. Soc.* Vol. I. p.p. 439-43; Vol. III. pt. II. pp. 51, 52: *Lord Valentia*, Travels, Vol. II. pp. 151-52, ... —220. 18 44 73 32

Bhájgáṅw भाजगांव, Nàné-Máwaḷ, Máwaḷ,—Rs. 82-4-6 paid as the Inám Tijái Akár; the Isáfat village is of Watani service,—
—66. .18 49 73 33½

Bhalawḍí भलवडी, on the Bám, Wáḍé, Kheḍ, . .18 57½ 73 39

Bhámbavḍé भांबवडे, *Bamboorda*, on the Muṭá, t. and T. Havelì,—A Brahmanical rock temple; Jatrá held on Chaitra Shuddh 15th on account of Rokaḍobá Deva, another Jatrá held on Ashwin Shuddh 1st and the following ten days in honour of Chatursinhgí Deví; Cattle Market every Sunday and Thursday,—*Jacquemont*, Journal, tom III. p. 584; *Jour. Bomb. Br. R. As. Soc.* Vol. III. pt. II. p. 55. . . . . 2,071. 18 31½ 73 55

Bhámbolí भांबोली, *Bhamboolee*, Chákaṇ, Kheḍ; an Inám,—Rs.0-15-4 paid on account of Varshásan Nemṇuk, . . —100. 18 47½ 73 50½

Bháṅḍgáṅw भांडगांव, on the Bhimá, t. and T. Iṅdápur,—389.
18 0 75 5½

Bháṅḍgáṅw भांडगांव, Páṭas, Bhimathaḍì: a Saranjám village,—263.
18 28 74 22½

Bharáḍí भराडी, on the Ghoḍ, Karḍé, Pábaḷ,—365. 18 59 74 5½

Bharatgáṅw भरतगांव, Sàṇḍas, Bhimathaḍí,— 386. 18 27 74 17

Bharé, भरे, *Bhureh*, on the Muḷá, Karyàt-Máwaḷ, Haveli;—an Inám, pop. 217. Lat. 18° 32′ N. Long. 73° 44′ E.

Bhátkhaḷé Peṭh भातखळे पेठ, S. of Shivaner fort, Haveli, Shivaner,—112. 19 11½ 73 55½

Bháṭnimbagáṅv भाट निंबगाव, on the Bhimá, t. and T. Iṅdápur,—190. 18 2 75 6½

Bhávaḍí भावडी, *Bhawurree* on the Yel, t. and T. Kheḍ;—an Inám village. . . . . .—220. 18 56½ 73 56

Bhávaḍí भावडी, t. and T. Iṅdápur. . . .—160. 18 13 74 59

Bhávaḍí भावडी, *Bhowuree*, Sánḍas, Bhimathaḍí, 250. 18 37½ 74 3

Bhavargirí भवरगिरी, *Bhourgeeree*, Wáḍé, Kheḍ. It has a temple of Mahádeva, called Bhimá-Shankar, built by Náná Phaḍnavis; Jatrá held in Mágh on the Shivarátra day,—187. 19 2½ 73 37½

Bhavrápur भवरापुर, *Bhowrapur*, on the Muṭá-Muḷá, Sánḍas, Bhimathaḍi . . . . . .—92. 18 32 74 11

Bhewareh v. Bhiwáḍé.

Bhewree v. Bhivrí.

Bhígavhaṇ भीगव्हण, t. & T. Iṅdápur, —375 . 18 18 74 50

Bhimáshankar Hill 3,448 feet above the sea, at the source of the Bhimá river: *Bom. Geog. Trans.* IX. p. 343 . . 19 4½ 73 35½

Bhímá R. भीमा, *Beema*, Sansk. भीमरथी, 'Bhímarathí,' rises at Bhimá Shankar 3,090 feet above the sea . . . . . 19 5 73 36 and flows S. E. for about 510 miles joining the Krishná at Kadlur . . . . . 16 24 77 20.

To the E. of Puṇa it is sometimes called *Bewra*. Its tributaries are—on the right, the Iṅdrayeṇí, Múṭá-Muḷá, Nírá, and Mán, and on the left—the Yel, Ghoḍ, Angá, Shíná, and Kaguna. The horses most esteemed by the Maráṭhas were called Bhimatiri, because bred in its basin. *Rennell*,—Memoir of Map of Hindustán, pp. 254, 257-58. *Hamilton*,—E. I. Gazetteer 'Beema'; Hindusthan vol. II. p. 145 *Thornton*—Gazet. "Beema"; *Dekh. Sar.* App. B., p. 96.

Bhiváḍé Budrúkh भिवाडे बुदरुख, *Bhewareh*, Minneher, Shivaner, —208. 19 13 73 45½

Bhiwádí Khurd भिवाडी खुर्द, on the Mina, Minneher, Shivaner,—241. 19 13 73 45

Bhiwḍí भिवडी, *Bhewree* Karepaṭár, Purańdar,—a Saranjám village. —pop. 781. Lat. 18° 23½′ N., Long. 73° 59½′ E.

Bhivégáńv भिवेगांव, Wáḍé, Kheḍ, . . —69 . 19 4 73 38

Bhoiré भोइरे, *Boheera*, Andar-Máwaḷ, Kheḍ,—315. 18 51 73 39

Bhokoom v. Bhukúm.

Bholeshwar, Temple, on a Hill, Sánḍas, Bhimathaḍi, 2,781 feet above the sea. *Bom. Geo. Trans.* vol. IX. p. 343. . . . . 18 26 74 18

Bhomáḷéń भोमाळें, Wáḍé, Kheḍ, . . . —93 . 19 1 73 38½

Bhońgawlí भोंगवली, P. Shirwaḷ, Purańdar,—951. 18 11½ 74 4

Bhońsé भोंसे, *Bhosen*, Chákaṇ, Kheḍ.—Lapsed to Government in 1828-29 . . . . . 701. 18 44 73 59

Bhorkas भोरकस, Pauḍh-Khoré, Máwaḷ,—Market on Mondays,—346. 18 31½ 73 31½

Bhosdarí भोसदरी, *Bhesduree*, Belhé, Shivaner,—370. 19 19 74 12

Bhosrí or Bhojapur, भोसरी, t. & T. Haveli,—an Inám,—Rs. 47-15-4 is paid on account of the Chákar manyáchi Báb,—1,019. 18 37 73 55

Bhowurgeeree v. Bhawargírí.

Bhugáńw भुगांव, on the Ráma Nadi, Karyát-Mawaḷ, Havelí,—an Inám, ... —399 . 18 30 73 48½

Bhukúm भुकूम, Karyát-Máwaḷ, Haveli,—564 . 18 29½ 73 46

Bhulowree v. Bhalawḍí.

Bhuradee v. Bharádí.

Bhureh v. Bharé.

Bhurúp Ghát. 18 32½ 73 24

Bhushí भुशी, *Bhooseé*, Náńé-Máwaḷ, Máwaḷ,—85 . 18 44 73 28

Bibí बिबी, *Bibbee*, on the Bhimá, t. & T. Kheḍ, with a temple of Khańḍobá built by the Gaikwáḍ—Jatrá in Shrávaṅ in honour of Mahádeva; an Inám village. . . . . —908. 18 57 73 50½

Birdavḍí बिरदवडी, *Beerdurree*, Chákaṇ, Kheḍ,—an Inám, Rs. 79-2-2 is paid on account of Mokásá Nemńuk. . —147. 18 46½ 73 54

Birsa, v. Beḍsa.

Biturdeh v. Botarḍé.

Biwarí बिवरी, on the Muṭa Muḷá, *Bhewuree*, Sáńḍas, Bhimathaḍí,— 181. 18 31½ 74 9

ı v. Bhoiré.

v. Boṭé.

gaon v. Burkegáṅw.

w बोपगांव, Karepaṭár, Puraṅdar,—a Saraṅjám village,—
pop. 644. Lat. 18° 22½′ N. Long. 74° 1′ E.

ḷ बोपखेळ, on the Muṭá Muḷá, t. & T. Havelí,—an Inám,—
346. 18 35 73 55

áṭ,—*Hamilton*, Gazet. 'Bhore Ghaut'; Hindustan, vol.II. p. 151;
ay's Handbook for India pp. 317-320. . . 18 46 73 25

बोरज, *Bhoruj*, Náṇé-Máwaḷ, Máwaḷ . 77. 18 45 73 34

ı बोरवली, Aṅdar-Máwaḷ, Kheḍ . . . 73. 18 53 73 33

r बोरघर, Aṁbégáṅw, Kheḍ . . . 769. 19 8½ 73 48½

ोरी, t. & T. Iṅdápur 719. 18 7½ 74 48

udrukh बोरी बुदरूख, on the Kukaḍi, Aḷé, Shivaner,—995.
19 7 74 10

hurd बोरी खुर्द, Belhé, Shivanér . . 389. 19 6½ 74 10

aḍak बोरीभडक, Sáṅḍas, Bhimathaḍí,—an Inám village,—
98-0-5 is paid for Mokásá and Chákar Máné Bábat, &c.—78.

áḷ बोरीबयाळ, Páṭas, Bhimathaḍí . . 269. 18 24½ 74 43

dí बोरियेदी, Sáṅḍas, Bhimathaḍí . . 539. 18 28 74 14½

Khurd बोर्पे खुर्द, on the Karsí, Pauḍh-Khoré, Máwaḷ,—145.
18 32½ 73 27½

v. Bhoṅsé.

ḷé बोतर्डे, *Biturdeh*, on the Miná, Minneher, Shivaner,—212.
19 12 73 52

बोटे, *Bohota*, on the Kos, Aḷé, Shivanér, *Thornton*, Gazet.
oteh' 467. 19 15½ 74 12½

pur v. Bhawrapur.

haṅwáḍé ब्राम्हणवाडे, on the Kos, Belhé, Shivaner,—
962. 19 21 74 6

e v. Badgí.

awḍí बुधवडी, *Boodhowree*, Náṇé-Máwaḷ, Máwaḷ.—86
18 47 73 35

Budhélé बुधेले, Náṇé-Máwaḷ, Máwaḷ,—Rs. 118-15-6 is paid according to the income of Inám Tijáí,—The Isáphat village is of Watani Service, ... pop. 123. Lat. 18° 46½′ N. Long 73° 30′ E.

Buhool, v. Bahúl.

Bukowree v. Bekorí.

Burkégáṅw बुरकेगांव, *Boorcehgaon*, Sáṅḍas, Bhimathaḍí,—324. 18 35½ 74 7

Burrudgaon v. Bharatgáṅw.

Chacheewullee v. Cháṅchiwalí.

Chákaṇ चाकण, Chákaṇ, Kheḍ, a temple of Mahádeva called Chitréshwar in ruins,—market on Mondays,—Malik-ul, Tijjar made it his head-quarters when he attempted to subdue Dekhan for the Báhmaṇí dynasty between 1443 and 1453; taken from Shiwájí 1646, restored 1667, taken by Dilawar Khán 1672.—Fort said to have been constructed by a Habshí Paligar in 1295 A. D.,—*Hamilton*, Gazet. —'Chaukna.'; *Thornton*, Gazet.—Chukun.; *Grant Duff*, Vol. I. pp. 61, 92, 131, 193, 221, 254; III. 442,—*Briggs's Ferishtah*, Vol. II. pp. 436-48, 483, 530; III. 194, 495; IV. 30; *Elphinstone*, Hist. p. 624; *Dekh. Sar.* App. B. p. 98, . . —3196. 18 45 73 55

Chákátí चाकाती, on the Nírá, t. & T. Iṅdápur,—119. 17 56½ 74 58½

Cháṁbaḷí चांबळी, Karépaṭár, Puraṅdar,—a Saraṅjám village,—1082. 18 22 74 2½

Cháṅchiwali चांचिवली, *Chacheewullee*, Pauḍh-Khoré, Máwaḷ,—67. 18 28 73 3 0½

Cháṅḍgáṅw चांडगांव, on the Bhímá, t. & T. Iṅdápur,—197. 18 15 75 0

Cháṅdkheḍ चांदखेड, near the Irolá, Pavan-Máwaḷ, Máwaḷ,—890. 18 39 73 42

Cháṅdé चांदे, on the Muḷá, Karyát-Máwaḷ, Haveḷi,—Lapsed to Government in 1846-47 . . . . . —127. 18 33½ 73 45½

Cháṅdiwalí चांदिवली, *Chandoolee*, Pauḍh-Khoré, Máwaḷ,—135. 18 35 73 31

Cháṅḍoho चांडोहो, on the Ghoḍ, t. & T. Pábaḷ,—197. 18 58 74 14

Cháṅḍolí Budrukh चांडोली बुदरुख, on the Ghoḍ, Máháḷuṅ Pábaḷ, ... —917. 19 1 74 2½

ḷolí चांडोली, on the Ghoḍ, t. & T. Kheḍ, an Inám village,—
pop. 81. Lat. 18° 51′ N. Long. 73° 55½′ E.
doolee v. Cháṅdiwalí.

ḍús चांदूस, on the Bám, Chákaṇ, Kheḍ,—145. 18 48½ 73 53

ḷí चरोली, *Churholee*, on the Iṅdrayeṇí, Chákaṇ, Kheḍ,—355.
18 40 73 58

ıolí चाहोली, *Churholee*, t. & T. Havelí,—an Inám village.—
47-15-4 is due on account of the Chákar Máné Báb Nemṇuk ;
—1849. 18 39 73 56½

चास, on the Ghoḍ, t. & T. Kheḍ,—Market every Tuesday,—
psed to Government in 1835-36.; *Dekh. Sar.* App. B. p. 96,
—2403. 18 55 73 53½

चास, on the Ghoḍ, Máháḷuṅgé, Pábaḷ, —1445. 19 3 73 57½

aṅḍ चावंड, *Chawund*, Kukaḍnéher, Shivaner, with a hill-fort in
ns, ... —228. 19 14½ 73 49

olí चिचोली, *Chincholee*, Páṭas, Bhimathaḍí,—an Inám villiage,
—643. 18 20 74 47

ıalgáṅw चिखलगांव, Wáḍé, Kheḍ,—an Inám village,—Rupees
:-8-11 is paid for Mokásá and Inám Chauthái Nemṇuk,—319.
18 59 73 46

ıalsé चिखलसे, Náṇé-Máwaḷ, Máwaḷ, —188. 18 44 73 37½

ıalí चिखली, Aṁbégáṅw, Kheḍ, . . —114. 19 4½ 73 44

ıalí चिखली, *Cheekhlee*, on the Nírá, t. & T. Iṅdápur,—133.
18 1½ 74 47½

éwáḍí चिलेहवाडी, Wotúr, Bráhmaṇwáḍá Peṭá, Shivanér,—128.
19 20 74 3

bḷí चिंबळी, *Chimlee*, Chákaṇ, Kheḍ, —335. 18 41½ 73 55

hoḍí चिंचोडी, Máháḷuṅgé, Pábaḷ,—989.

holí चिंचोली, Havelí, Shivanér, . —256. 19 7½ 73 55

holí चिंचोली, *Chinchoolee*, t. & T. Pábaḷ,—470. 18 49 74 13

holí चिंचोली, Havelí, Shivanér, . . —256. 19 7 73 55

holí चिंचोली, on the Ghoḍ, Ghoḍé, Kheḍ,—365. 19 3 73 55½

holí चिंचोली, t. & T. Havelí,—an Inám village; Rs. 24-15-1 is
d on account of the Chákar Báb Nemṇuk,—332 18 41 73 49

Chíńchosí चिंचोसी, t. & T. Kheḍ,—a Sarañjám village,—pop. 370. Lat. 18° 45′ N. Long. 74° 4′ E.

Chíńchwaḍ चिंचवड; *Chinchwar* or *Chinchore*, on the Páwaná, t. & T. Havelí,—Jatrá on Márgashirsh Vad 6th for Moryá Deva—a living incarnation of Gaṇesha; Market on Saturdays and the Jatrá day. See *Hamilton*, Gazet. 'Chinchoor;' *Lord Valentia*, Trav. Vol. II. pp 102, 138-47; *Moor*, Hindu Pantheon, pp. 173-74; *Asiat.* Res. Vol. VII. pp. 381-395. (8vo. ed.) *Grant Duff*, II. 368,—2281. 18 37½ 73 50

Chíńchwaḍ चिंचवड, Pauḍh-Khoré, Mawaḷ, —274. 18 30 73 39

Chombhút चोंभूत, *Chombee*, Aḷé, Shivanér, —595. 19 1 74 16

Chopaḍaj चोपडज, *Choporuj*, P. Supé, Purañdar,—710. 18 10 74 2

Churhole v. Chiravlí.

Churholee v. Charolí.

Dahiṭṇé दहिटणे, *Duheetna*, on the Muṭá-Muḷá, Sáńḍas, Bhimathaḍí, —252. 18 32½ 74 1[illegible]6

Dahiwalí दहिवली, Náṇé-Máwaḷ, Máwaḷ, . . . —18 47 73 3[illegible] 3

Ḍáhulí डाहुली, Añdar-Máwaḷ, Kheḍ,—The Isáfut village is of Watní Service; Rs. 88-4-8 is paid an account of Inám T[illegible]jáí Nemṇuk, ... —168. 18 53½ 73 [illegible]2

Dáij डाईज, or *Duluj*, on the Bhímà, t & T. Iṅdápur, 590. 18 15 74 [illegible]3½

Dálímb दालींब, Sáńḍas, Bhimathaḍí,—*Dekh. Sar*, App. H. pp. 4 [illegible] 8, 11-15, 21-23, ... —361. 18 27 74 [illegible]3

Dalowree Dalwarree v. Dháléwáḍí.

Damneh v. Dhámṇé.

Dápoḍí दापोडी, *Dapooree*, Páṭas, Bhimathaḍí,—232. 18 29 74 28

Dápuḍí दापुडी, *Dapoorie*, on the Páwaná, t. & T. Havelí; 1681 ft. above the sea; *Balfour*, Barom. Sect. of India; *Hamilton*, Gazet. 'Darapooree'; *Thornton*, Gazet. 'Dapooree;' *Lady Falkland*, Chow-Chow. Vol. I. p. 228. . . . . 18 35 73 53½

Darakwáḍí दरकवाडी, *Durukwarree*, Wáḍé, Kheḍ, 194. 18 59 73 50

Dárawlí दारवली, *Daroolee*, on the Muḷá, Pauḍh-Khoré, Máwaḷ, *Dekh. Sar.* App. B. p. 79, ... —536. 18 32 73 42

Dárumbré दारुंब्रे, on the Irolá, t. & T. Havelí, 292. 18 39 73 45-

Dauṅḍ दौंड, *Dhond*, on the Bhímá, Páṭas, Bhimathadí,—a temple built by Suktaṇkar and the people; Jatrá on chaitra Vad 8th on account of Kál Bhairava Deva; Market every Sunday and the Jatrá day; a Saraṅjám village; Rs. 98-1-11 is paid on account of Mokásá Nemṇuk; *Dekh. Sar.* App. G. pp. 10, 11.—pop. 792.
Lat. 18° 28′ N. Long. 74° 39′ E.

Daunḍaj दौंडज, *Doundaj*, Nirathaḍí, Puraṅdar, 322. 18 13 74 14

Dáwaḍí दावडी, *Dhawuree*,—Chákaṇ, Kheḍ, an Inám village, Rs. 7-14-7 is paid for Deshmukhí Nemṇuk, . . . —618. 18 47 74 2

Dáwaḍí, दावडी, *Dawuree*, Pauḍh-Khoré, Máwaḷ, —18 28 73 30

Deegid v. Digaḍ.

Deeksul v. Díksal.

Deesulee v. Dísali.

Deeweh v. Díyé.

Dehaṇé देहणे, *Duheena*, on the Bhímà, Wáḍé, Kheḍ, The Isáfat village is of Wataní Service; Rs. 80-9-2 is paid for Inám Tijái Nemṇuk, ... —241. 19 1½ 73 42½

Dehú देहू, t. & T. Havelí,—an Inám village,—763. 18 43 73 49½

Dehwusee v. Devosí.

Delawaḍi देलवडी, *Dhalowree*, on the Muṭá Muḷá, Páṭas, Bhimathaḍí, —273. 18 33½ 74 22½

Déuḷgáṅv देउळगांव, P. Supé, Puraṅdar, . —554. 18 17 74 32

Deuḷgáṅvgáḍá देउळगांव गाडा, Páṭas, Bhimathaḍí,—230. 18 24 73 26½

Deuḷgáṅvrájé देउळगांव राजे, on the Bhímà, Páṭas, Bhimathaḍí, 471. 18 27½ 74 44½

Devagaḍ देवगड, Pauḍh-Khoré, Máwaḷ, . —181. 18 39 73 27½

Devaghar देवघर, Náṇé-Máwaḷ, Máwaḷ, . —119. 18 46 73 31

Devhaḍí देव्हडी, Kheḍé-Báré, Havelí, . . —349. 18 15 73 59

Devaḷé देवळे, Kukaḍneher, Shivaner, . . —104. 19 18 73 49

Devaḷé देवळे, *Dewleh*, Náṇé Máwaḷ, Máwaḷ,—235. 18 43½ 73 32

Devaḷolí देवळोली, *Dewlolee*, on the Muṭá, Pauḍh-Khoré, Máwaḷ,—126 18 34 73 29

Devosí देवोसी, *Dehwusee*, Wádé, Kheḍ, . —pop. 159.
Lat. 18° 57′ N., Long. 73° 46′ E.

Dewleh v. Devaḷé.

Ḍhákáḷé ढाकाळे, Máháḷuṅgé, Ambégáṅw Petá, Kheḍ,—175.
19 0½ 73 51

Ḍhákaḷé ढाकळे, *Taklee*, Máháḷuṅgé, Ambégáṅw Péṭá, Kheḍ ; a Saraṅjám village ; Rs. 413-0-3 is due according to the Akár of the Mokásà, Nim Chauthái, Sar Deshmukhí, Phaujdárí, &c.,—229;
18 10 74 30½

Ḍhákaḷí ढाकळी, Sáṅḍas, Bhimathaḍí,—*Dekh. Sar.* App. D. pp. 37 40, 62, 125, 130, 135, ... —154.

Ḍhákḷibhímá ढाकळिभीमा, *Tanklee*, on the Bhímá, t. & T. Pábal, —332. 18 38½ 73 17

Dháléwáḍí धालेवाडी, Náṇé-Mawaḷ, Máwaḷ, ... 18 42 73 33

Dháléwáḍí धालेवाडी, *Dalwarree*, on the Míná, Minnehér, Haveli, Shivaner, ... —136. 19 13 73 48½

Dháléwáḍí धालेवाडी, *Dalowree*, on the Kará, Karépaṭar, Puraṅdar: Jatrá at New Moon when it falls on a Monday on account of Khanḍobá of Jejurí who comes for a bath in the river Kará, within the limits of this village. . . . . —338. 18 18½ 74 13½

Dhalowree v. Delawḍí.

Dhámaṇkhel धामणखेल, Havelí, Shivaner ; temple built in the time of the Peshwé, ... —168. 19 10½ 73 56

Dhámṇé धामणे, Wáḍé, Kheḍ, ... —213. 18 50 73 48

Dhámṇé धामणे, *Damneh*, on the Indráyeṇi, t. & T. Havelí,—
347. 18 41½ 73 43

Dhámṇí धामणी, t. & T. Pábaḷ, . . . —1297. 18 55½ 74 8

Dhámrí धामरी, t. & T. Pábaḷ, . . . —1502. 18 48 74 8

Dháṅgolé धांगोले, on the Nila, Pauḍh-Khoré, Mawaḷ,—18 29 73 33

Dháṅk ढांक, Minneher, Shivaner, . . —241. 19 13½ 73 45

Dhaṅkawḍí धनकवडी, *Dhunkowree*, Nirathaḍí, Puraṅdar,—148.
18 13½ 74 4

Dhánoré धानोरे, on the Bhímà, t. & T. Pábaḷ,—a Jahágír; *Dekh. Sar.* App. H. pp. 3, 8, 11, 12; Rs. 128-8-7 is due on account of the Mokásá Nemṇuk, . pop. 575. Lat. 18° 37½′ N. Long. 74° 11′ E.

Dhánoréṅ धानोरें, on the Iṅdráyeṇi, Chákaṇ, Khed.—439. 18 47 74 2

Dháṅorí धानोरी, *Danaree*, t. & T. Havelí, .—222. 18 36 73 57

Dhaguree v. Dáwḍí.

Dháyarí धायरी, t. & T. Havelí, . . . —1058. 18 25½ 73 52

Dholeshwar, Temple on a hill, Rámawáḍí, Purandar,—2949·6 ft. above the sea. Bombay Geo. Trans. IX. p. 343. 18 26 74 13½

Dholwaḍ धोलवड, on the Pushpávatí, Havelí, Shivaner, 1,007. 19 13½ 74 2½

Dhond v. Dauṅḍ.

Dhoowolee v. Dhuwolí.

Dhunkowree v. Dhankawḍí.

Dhuwolí धुवोली, *Dhoowolee*, Wáḍé, Kheḍ, —105. 19 2 73 42

Digad दिगद, *Deegid*, on the Ghoḍ, Aṁbégáṅw, Kheḍ,—153. 19 8 73 45

Dighí दिघी, *Digghee*, t. & T. Havelí, . . —279. 18 37 73 56

Diksaḷ दिकसळ, *Deeksul*, on the Bhimá, t. & T. Iṇdápur.—214. 18 18 74 51

Hill near it 2,489 ft. above the sea. Bomb. Geog. Trans. vol. IX. p. 343.

Diṁbé Budrukh डिंबे बुदरूख, Ghoḍé, Kheḍ,—163. 19 6 73 47½

Diṁbé Khurd, डिंबे खुर्द, on the Ghoḍ, Ghodé, Kheḍ,—86. 19 5 73 49

Diṅgoré डिंगोरे, on the Pushpávati, Havelí, Shivaner,—991. 19 17 73 59½

Disalí दीसली, *Deesulee*, on the Muṭá, Pauḍh-Khoré, Máwaḷ,—61. 18 31½ 73 35½

Diyé दाये, *Deeweh*, Karyát-Sáswaḍ, Puraṅdar, with a large castle-like building in ruins; Jatrá held on Chaitra Vad 8th on account of Bhairava Deva. A Saraṅjám Villagé, . —2238. 18 23 74 5½

Doṇ दोण, Aṁbégáṅw, Kheḍ, ... —163. 19 11 73 42

Doṅdé दोंदे, on the Bhímá, t. & T. Kheḍ,—Jatrá in Chaitra Shudh 9th in honour of Bhairava Deva,—a Sarañjám village,—pop. 716.
Lat. 18° 52′ N. Long. 73° 54½′ E.

Doṅgargáṅw डोंगरगांव, on the Bhímá, Sánḍas, Bhimathaḍí, —342.
18 37 74 [illegible]

Doṅgargáṅw डागेरगांव, Náṇé-Máwaḷ, Máwaḷ, Western extrémity of the Karla base, 2,079·5 ft. above the sea;—*Bomb. Geog. Trans.* Vol. IX. p. 343, ... —111. 18 44½ 73 30

Doṅgargáṅw डोंगरगांव, on the Wálkí, Pauḍh-Khoré, Máwal,—303.
18 34½ 73 35

Doṇjé or Doṇja, डोणजे, Karyát-Máwaḷ, Haveli,—Market on Fridays, ... —481. 18 24½ 73 50

Doodoolgaon v. Duḍuḷgáṅv.

Dounduj v. Daunḍaj.

Dudhaviré दुधविरे, Náṅé-Máwaḷ, Máwaḷ, —68. 18 41½ 73 3[illegible]

Duḍuḷgáṅw डुडुळगांव, on the Iṅdrayeṇi, t. & T. Havelí,—196.
18 41 73 5[illegible]

Duheena v. Dehaṇé.

Duheetna v. Dahiṭṇé.

Durukwarree v. Darakwáḍí.

Eḍgáṅw एडगांव, *Yeerganw*, on the Kukaḍi, Aḷé, Boripeṭa, Shivaner —487. 19 10 74 [illegible] 4

Eṇeré एणेरे, Miṇneher, Shivaner, . . —550. 19 10 73 5[illegible] 3½

Gaḍad गडद, Wáḍé, Kheḍ, ... —188. 18 54 73 4[illegible]0

Gágargáṇw गागरगांव, t. & T. Iṅdápur, —203. 18 9½ 75 [illegible]

Gáṅgápur गंगापुर, on the Ghoḍ, Ambeganw, Kheḍ,—345.
19 4 73 5[illegible] ½

Gaṅgápur Khurd गंगापुर खुर्द, Ghoḍé, Khéḍ,—449. 19 6½ 73 52

Gaṅjéwaḷaṇ गांजेवळण, *Ganjeewulhun*, on the Bhímá, t. & T. Iṅdápur, ... —110. 18 14½ 75 5

Gár गार, on the Bhímá, Sáṅḍas, Bhimathaḍí,—a Jahágir village,—Rs. 227-2-2 is due according to the income of the Mokásá,—52.
18 28½ 74 39

Garáḍé गराडे, *Gurrdeeh*, on the Kará, Karépaṭár, Puraṅdar,—Lapsed to Government in 1845-46,—*Dekh. Sar.* App. D. p. 39; App. M. p. 2, ... —pop. 1087. Lat. 18° 21′ N. Long. 73° 59½′ E.

Gargaon v. Ghárgáṅw.

Garnolot Ghát 18 30 73 27

Gáúḍdaré गाउडदरे, *Gawoordurreh*, Kheḍé-Báré, Havelí,—an Inám villiage, ... —127. 18 21½ 73 54

Geṅvḍhé गेंवढे, *Gewuda*, on the Páwaná, Pawan-Máwaḷ, Máwaḷ,—253. 18 38 73 32½

Geereem v. Girím.

Geeroolee v. Girawlí.

Geervee v. Girví.

Gewuda v. Geṅvḍhé.

Ghaṅgáḷdaré घंगाळदरे, Minnéhér, Shivaner,—171. 19 11½ 73 48½

Ghárgáṅw घारगांव, *Gargaon*, on the Muḷá, Karḍé, Shivaner,—646. 19 18 74 19

Ghátghar घाटघर, Kukaḍnehér, Shivaner,—Has the ruins of the Hill fort called Jivadhan जिवधन, . . . —174. 19 17 73 46

Ghoḍ R. घोड, rises in Khed. 19 6 73 36
joins the Bhímá 18 30½ 74 37

Ghoḍé घोडे, *Ghoréh*, on the Ghoḍ, Ghoḍé, Kheḍ,—Market on Fridays, ... —4362. 19 2½ 73 54½

Ghoṇshet घोणशेत, Náṇé-Máwaḷ, Máwaḷ, —218. 18 49 73 38

Ghookeh v. Ghuṭké.

Ghootgee v. Ghuṭké.

Ghoreh v. Ghoḍé.

Ghorpaḍí घोरपडी, *Gorepurree*, t. & T. Havelí,—646. 18 31 73 57½

Ghoṭawḍé घोटवडे, *Ghotowreh*, Pawan-Máwaḷ, Máwaḷ. Has an old temple; Jatrá held on Mágh vad 5th on account of Bápují Báwá Deva; another Jatrá on Chaitra shuddh 15th in honour of Rákaḍobá Deva; Market on Tuesdays, and the Jatrá days except during the monsoons,—an Inám village,—Rs. 40-4-7 is paid on account of the Watan Japtí Nemṇuk, ... —1074. 18 33 73 42½

Ghoṭawḍí घोटवडी, Wáḍé, Kheḍ.—The Isafut village is of Watani Service;—Rs. 40-4-7 is paid on account of Inám Tijái Nemṇuk. —pop. 353. Lat. 18° 59′ N. Long. 73° 41′ E.

Ghuṭké घुटके, *Ghootgee*, Pauḍh-Khoré, Máwaḷ,—279. 18 31½ 73 26½

Girawlí गिरवली, *Geeroolee*, Mahálúṅgé, Pábaḷ,—509. 19 5 73 55½

Girím गिरीम, *Geereem*, Páṭas Bhimaṭhaḍí,—a Jahágir village,—Rs. 36-0-2 is paid on account of Mokásá Nemṇuk,—441. 18 26 74 35

Girví गिरवी, *Geervee*, on the Nírá, t. & T. Iṅdápur,-an Inám village, —Rs. 22-1-11 is due on account of the Deshmukhí,—17 57 75 10

Godré गोद्रे, *Godra*, Haveli, Shivaner, . —288. 19 16 73 56

Goḍumbré गोडुंब्रे, *Goroombreh*, on the Páwaná, Karyát Máwaḷ, Haveli,—an Inám village, ... —153. 18 40 73 44½

Gogalwáḍí गोगलवाडी, Kheḍé-Báré, Haveli,—an Inám village,—Rs.86 is due on the farm of pasture lands, . —185. 18 22½ 73 54½

Gohé Budrukh गोहे बुदरूख, Ghoḍé, Kheḍ,—607. 19 4½ 73 48½

Gohé Khurd गोहे खुर्द, Ghoḍé, Kheḍ, . —336. 19 4 73 47

Gojubáwí गोजुबावी, *Goodjbawee*, Karyát-Bárámatí, Iṅdápur,—522. 18 13 74 38

Gokhaḷí गोखळी, t. & T. Iṅdápur, . . —105. 18 5 75 3

Golégáṅw गोलेगांव, on the Iṅdráyeṇí, Chákaṇ, Kheḍ,—a temple of Mahádeva called Kápuréshwar, . . . —390. 18 38 74 2

Goḷégáṅw गोळेगांव, on the Kukaḍe, Haveli, Shivaner.—Caves in the hill—Jatrá held on Bhádrapad shuddh 4th in honour of Gaṇapatí, 19 13½ 73 57

Gonawḍí गोनवडी, Chákaṇ, Kheḍ,—of Wattan Isafut Service.—Rs. 74-9-7 is paid on account of Isafut Nemṇuk, and the proceeds of the farm of pasture land, ... —85. 18 48½ 73 54

Gonawḍí गोनवडी, *Gonowree*, Pauḍh-Khoré, Máwaḷ,—143. 18 29 73 33½

Goṅdí गोंदी, on the Nírá, t. & T. Iṅdápur, —151. 17 56 75 7

Goodjbawee v. Gojubáwí.

Gooloonchee v. Guḷuṅché.

Goonud v. Gunaṅd.

Goorholee v. Gurholí.

Gorhé Khurd गोऱ्हे खुर्द, on the Mutá, Karyát-Máwaḷ, Haveli, —pop. 295. Lat. 18° 24½′ N. Long. 73° 49′ E.

Gorhé Budrukh गोऱ्हे बुदरुख, on the Muṭá, t. & T. Havelí,—629. 18 25 73 48

Gorégáṅw गोरेगांव, Wáḍé, Kheḍ,—an Inám village,—Rs. 16-11-0 is due on account of Mokásá income, . . —138. 19 0 73 45

Gorepurree v. Ghorpaḍí.

Goroombreh v. Goḍumbré.

Gosási गोसासी, t. & T. Kheḍ,—an Inám,—171. 18 49 74 3

Gotoḍí गोतोडी, *Gotondee*, t. & T. Iṅdápur,—337. 18 4 74 56

Govitrí गोवित्री, Náṇé-Máwaḷ, Máwaḷ,—an Inám,—205. 18 48 73 35

Gulánı गुलाणी, Kheḍpaikí, Pábaḷ, . . —585. 18 52½ 74 1

Guḷuṅché गुळुंचे, *Gooloonchee*, P. Shirwaḷ, Puraṅdar,—a Saraṅjám village.—See Govt. Corres. No. 3471 of 13th August 1849, and letter of Court of Directors, 22nd May 1849,—1197. 18 8 74 17½

Gunaṅd गुनंद, *Goonud*, on the Nírá, P. Shirwaḷ, Puraṅdar,—the Isafut village is of Watání Service, . —171. 18 8 74 7

Gunawḍí गुनवडी, *Gonowree*, on the Kará, Karyát-Bárámatí, Iṅdápur, ... —1362. 18 8 74 38½

Gungapur v. Gaṅgápur.

Gurholí गुऱ्होली, *Goorholee*, Karépaṭár, Puraṅdar,—380. 18 24 74 9½

Gurradeeh v. Garáḍé.

Haḍapsar हडपसर, *Hurrupsur*, t. & T. Haveli,—1774. 18 30 74 0

Haḍsar हडसर, *Hursur*, Kukaḍneher, Shivaner—Fort in ruins remarkable for the labour bestowed on one of its gates and the ascent up to it; . . . . . —163. 19 16 73 53

Halgoolwaree v. Holguṅḍwáḍí.

Harguḍé हरगुडे, Nirathaḍí, Puraṅdar, . —231. 18 13½ 74 9

Harischandragaḍ, 4680 ft. above the sea.—Bom. Geog. Trans., IX 343; *Hamilton*, Gaz.' Hurreechunderghur'; Hindustan, Vol. II. p. 181. 19 23 73 51

Harṇí हरणी, *Hurnee*, Niraṭhaḍí, Puraṅdar.—It is a hereditary Saraṅjám village,—Rs. 131-11-2 is paid on the Mokásá,—*Dekh. Sar.* App. D. pp. 37-40,—pop. 477. Lat. 18° 10½′ N. Long. 74° 11′ E.

Hatvíj हतवीज, *Hauveej*, Minneher, Shivaner,—181. 19 12 73 43

Heṅdruj हेंद्रुज, Wáḍé, Kheḍ,—Market on Fridays,—165. 18 54 73 45½

Hewreh v. Hivré.

Hiṅgaṇgáṅw हिंगणगांव, on the Bhímá, t. & T. Iṅdápur,—436. 18 9½ 75 9½

Hiṅgaṇgáṅw हिंगणगांव, on the Muṭá-Muḷá, Sáṅḍas, Bhimathaḍí,—184 18 32 74 12½

Hiṅgaṇíberḍí हिंगणीबेर्डी, Páṭas, Bhimathaḍí,—an Inám village, —301. 18 25½ 74 46½

Hiṅgaṇé Khurd हिंगणे खुर्द, Karyát-Máwaḷ, Haveli,—Has an old temple, and Jatrá is held on Ashádh Shuddh 11th on account of Viṭhobá Deva, ... —105. 18 28 73 54

Hiṅgaṇé हिंगणे, *Hingree*, on the Muṭá, t. & T. Haveli, —539. 18 29 73 53½

Hiṅgaṇígáḍá हिंगणीगाडा, on the Bhímá, Páṭas, Bhimathaḍí,—397. 18 25½ 74 41½

Hingree v. Hiṅgaṇé.

Hiṅjavḍí हिंजवडी, *Hinjowra*, t. & T. Haveli,—an Inám village,—Rs. 86-9-2 is due on account of the Chákar Mányachee Báb,—383. 18 35½ 73 48½

Hiṅvargáṅw हिंवरगांव, *Hiwurgaon*, Belhé, Shivaner,—Acquired by Government in 1836, ... —212. 19 21 74 20

Hiṅvré हिंवरे, Minnéher, Shivaner, . . —216. 19 11 73 49

Hiṅvré Budrukh हिंवरे बुदरूख, on the Pushpávati, Haveli, Shivaner, —Hurús held in Chaitra in honour of Lávakhán Báwá Pír,—1101. 19 11 74 3½

Hiṅvré Khurd हिंवरे खुर्द, on the Pushpávati, Haveli, Shivaner,—495. 19 13 74 2½

Hirḍí हिर्डी, Kukadneher, Shivaner, . . —87. 19 16½ 73 49

Hivré हिवरे, *Hewreh*, t. & T. Pábaḷ, . . —508. 18 46 74 11

Hivré हिवरे, on the Míná Náráyaṇgáṅw, Pábaḷ,—pop. 434.
Lat. 19° 5′ N. Long. 74° 4′ E.

Hivré हिवरे, Karépaṭár, Puraṅdar,—a Saraṅjám village,—Rs. 8-7-1 is due on account of Nemṇuk of the water of a channel,—700.
18 21½ 74 4

Hiṅvurgaon v. Hiṅvargáṅv.

Hoḷ होळ, on the Nírá, Nirathaḍí, Puraṅdar,—the village lapsed to Government in 1826-27, ... —487. 18 6 74 25

Holguṅḍwáḍí होलगुंडवाडी, *Halgoolwaree*, t. & T. Iṅdápur,—32.
18 14 74 51

Hurnee v. Harṇí.

Hursur v. Haḍsar.

Iṅdápur Táluká acquired by Government in 1827-28,—52,830.
17 54 74 29½
18 19 75 13

Iṅdápur Kasbá, इंदापुर, Hamlets—Taraṅgwáḍí on the W.; Galaṅḍwáḍí on the S. E.; Galaḍáwádí, Narohijáwáḍí, Tákurwáḍí, to the N.; Máḷéwáḍí N. E.; Saraḍayáchiwáḍí to the E.—A *hurus* on Márgashirsh Shuddh 8th, 9th, and 10th on account of Chápkhán Pír,—Market on Sundays and the *hurus* days,—7,051. 18 6½ 75 5

Iṅdápur Peṭh, इंदापुर पेठ, t. & T. Iṅdápur,—Market on Sundays,—*Thornton*, Gaz. 'Indapoor'; *Grant Duff*, I. pp. 124, 134,—3237.
18 6 75 5

Iṅdráyeṇí or Iṅdráwaní R., rises 18 44 73 25
Joins the Bhímá 18 40 74 4

Iṅdurí इंदुरी, *Endooree*, on the Iṇdráyeṇi, joins the Bhima, Chákaṇ, Kheḍ,—an Inám village, ... —661. 18 44½ 73 46

Iṅgḷuṇ इंगळुण, *Inglor*, on the Mína, Minnéhér, Shivaner,—457.
19 13 73 46

Iṅgḷun इंगळुन, Andar-Máwaḷ, Kheḍ, . —261. 18 54½ 73 37½

Isapur or Visapur fort, 1,200 feet above the plain,—*Hamilton*, Gazet. 'Esaghar'; *Lord Valentia*, Trav. Vol. II. pp. 100, 101, 148, 152.—
18 43 73 33

Jaḷavṅḍí जळवंडी, *Jalowree*, on the Kukaḍe, Kukaḍnehér, Shivaner,
19 16½ 73 48

Jaḷgáṅw जळगांव, *Julgaon*, on the Kará, Karepaṭár, Puraṅdar,—502.
18 13½ 74 31½

Jaḷgáṅw जळगांव, P. Supé, Puraṅdar,—pop. 625. Lat. 18° 14′ N. Long. 74° 31′ E.

Jaḷochí जळोची, *Jalloochee*, Karyát Bárámatí, Iṅdápur,—291. 18 8½ 74 40

Jalowree v. Jalavṅḍí.

Jáṁb जांब, on the Nírá, t. & T. Iṅdápur, —100. 18 2 74 16

Jáṁbavḍé जांबवडे, Chákaṇ, Kheḍ, ... 18 46 73 47½

Jáṁbavlí जांबवली, *Jamboli*, Náṇé-Máwaḷ, Máwaḷ, 18 51 73 31

Jáṁbé जांबे, *Jamb.*, on the Páwaná, t. & T. Havelí,—an Inám village, —Rs. 24-15-1 is due on account of the Chákar Mányáchí Báb,—302. 18 37½ 73 47½

Jáṁbgáṅv जांबगांव, on the Muḷá, Pauḍh-Khoré, Máwaḷ,—222. 18 32 73 35½

Jáṁbhoḷ जांभोळ, Náṇé-Mawal, Máwaḷ, —203. 18 45½ 73 40

Jáṁbhorí जांभोरी, Aṁbégáṅw, Kheḍ, . —533. 19 6 73 43

Jáṁbhuḷṇé जांभुळणे, Pauḍh-Khoré, Máwaḷ, . . 18 40 73 28½

Jáṁbḷé जांबळे, Votúr, Shivaner, . . . —259. 19 18 74 7

Jáṁbḷí जांबळी, on the Musá, Mosé-Khoré, Havelí,—280. 18 23½ 73 43

Jamboli v. Jáṁbaḷí.

Jáṁbuḷshí जांबुळशी, Votúr, Bráhmaṇwáḍá, Shivaner, 19 21 73 57

Jáṁbut जांबुत, on the Kukaḍe, Aḷé, Shivaner,—505. 19 0 74 15½

Játégáṅv Budrukh जातेगांव बुद्रूख, on the Yel, t. & T. Pábaḷ,—465 18 43 74 10

Játégáṅw Khurd जातेगांव खुर्द, t. & T. Pábaḷ,—480. 18 43 74 10

Jauḷké Budrukh जउळके बुद्रूख, t. & T. Kheḍ,—an Inám villa[illegible] Rs. 262-9-1 is paid on account of Mokásá and other Nemṇuk,—30 18 55 74 2

Jauḷké Khurd जउळके खुर्द, *Jowla*, t. & T. Kheḍ,—a life Inám,— Rs. 77-11-10 is paid on account of Mokásá and other Nemṇ[illegible] —221. 18 51 73 5[illegible]

Javaḷárjun जवळार्जुन, *Joolarjoon*, on the Kará, Belhé, Puraṅd[illegible] —412. 18 17½ 74 1[illegible]

जवळे, *Jowleh*, on the Ghoḍ, Avsarí, Pábaḷ,—pop. 229.
Lat. 18° 59′ N. Long. 74° 7′ E.

Báḷéshwar जवळे बाळेश्वर, Belhé, Shivaner,—639.
19 27 74 12

r v. Jevur.

जेजुरी, *Jeejooree*, Karépaṭár Puraṅdar,—A temple of Khan-
on the hill built by the Hoḷkar. Four Jatrás are held on his
int,—Paush Shuddh 15th, Mágh Shuddh 15th, Chaitra
dh 15th, and Márgshirsh Shuddh 15th—Market every day ;
. *Sar.* App. B. p. 95 ; *Hamilton*, Gaz. 'Jejurry' ; *Moor*, Hindu
heon, p. 43, 199, 422 ; *Thornton*, Gaz. 'Jejoorie'; *Hamilton*,
'Joodhun'; near it is Jevadhan *Joodhun*, a hill fort captured
bombardment in 1818. . . . . —2,290. 18 17 74 13

जेवरे, *Jewreh*, Náṇé-Máwaḷ, Máwaḷ . —80. 18 47 73 30
. Station on a hill a little to the N. 2881·1 ft. above the sea.
mb. Geog. Trans. Vol. IX. p. 343. . . . 18 47½ 73 29½

जेवुर, *Jehwoor*, on the Nírá, P. Shirwal, Puraṅdar,—294.
18 7½ 74 13½

w जिरेगांव, *Jeerehgaon*, Páṭas, Bhimathaḍí,—409.
18 22 74 36

í जोगवडी, *Jogowree*, Karépaṭár, Puraṅdar,—438.
18 14 74 19

on v. Javḷárjun.

or *Joonur* v. Junnar.

. Jauḷké Khurd.

v. Javḷé.

, on Jivdhan, a remarkable Hill-fort,—see *Hamilton's* Hindustan,
II. p. 181.

v. Jaḷgánv.

जुन्नर, *Jooneer* or *Joonur*, Havelí, Shivaner,—Market every
ay ; Shivaji's first act of hostility against the Mughuls was the
ler of this place in 1657 ; Buddhist Caves in the neighbourhood;
ivaner.—*Dekh. Sar.* App. B. p. 96 ; *Hamilton*, Gazet. and Hin-
n, Vol. II. p. 181. ; *Thornton*, Gazet. '*Jooneer*;' *Grant Duff*,
I. pp. 8, 61, 92, 121, 162, 244, 267 ; *Bird's* Caves of Western
, p. 11 ; *Jour. Bomb. Br. As. Soc.* Vol. III. part II. pp. 62-64 ;

Jour. R. As. Soc. Vol. IV. pp. 281-291—pop. 14,458.
Lat. 19° 12′ N. Long. 73° 56′ E.

Junnar Haveli, *Hamilton*, Hindustan Vol. II. p. 181. { 19 6 73 52 / 19 19½ 74 6

Kaḍadhé कडधे, *Kurdheh*, t. & T. Kheḍ,—A Sarañjám village; As. 15-4 is due on account of Warshásan Nemṇuk,—404. 18 57 73 52

Kaḍhadé कडधे, *Kurda*, Pawan-Máwaḷ, Máwaḷ,—239. 18 42 73 35½

Kaḍús कडूस, *Kurroos*, t. & T. Kheḍ,—A hereditary Inám village; Rs. 296-6-8 is paid on account of the attachment of the Watan of the Pátíl; Market on Wednesdays, —3,295. 18 53½ 73 52½

Kahú कहू, *Kuhoo*, on the Bhímá, Wáḍé, Kheḍ,—194. 18 57½ 73 49½

Kairgaon v. Keḍgáñw.

Kájhaḍ काझड, t. & T. Iṅdápur, . . —1048. 18 9 74 48

Kaḷaṁb कळंब, *Kulumb*, Belhé, Shivaner, —296. 19 23 74 8

Kaḷaṁb कळंब, *Kullumb*, on the Nírá, t. & T. Iṅdápur,—1095. 18 1 74 50

Kaḷaṁbaí कळंबई, *Kullumbuee*, on the Ghoḍ, Aṁbégáñw, Kheḍ,—134. 19 6½ 73 45½

Kaḷamshet कळमशेत, *Kullumshet*, Pauḍh-Khoré, Máwaḷ,—102. 18 31 73 37½

Kaḷas कळस, *Kullus*, Aḷé, Shivaner, . —669. 19 6 74 17

Kaḷas कळस, *Kulus*, t. & T. Iṅdápur,—Market on Tuesdays,—*Thornton*, Gaz.—'Kulus.' . . . . . —1,922. 18 10½ 74 51
T. S. station on a hill 2½ m. S. E. 2018·5 ft. above the sea. Bomb. Geog. Trans. Vol. IX. p. 343.....18. 9·293, 74. 52·153.

Kaḷas कळस, *Khulus*, on the Muḷá, t. & T. Haveli,—An Inám village, Rs. 49-14-1 is due no account of the Sar Deshmukhí and Sohotrá Nemṇuk, ... —205. 18 34½ 73 56

Kaḷási कळासी, *Kulasee*, on the Bhímá, t. & T. Iṅdápur,—506. 18 12½ 75 4

Káḷarí काळदरी, Nirathaḍí, Puraṅdar,—Lapsed to Government in 1845-46, ... —539. 18 15 74 3½

Kálé काले, Minṅcher, Shivaner, . . . —424. 19 10 73 53

Kálé काले, Pawan-Máwaḷ, Máwaḷ. . . —253. 18 41 73 34

Kalhát कलहाट, Chákaṇ, Kheḍ,--pop. 311. Lat. 18° 52′ N. Long. 73° 40½′ E.

Kal Ombreh v. Khálumbré.

Kálṭaṇ कालटण, on the Bhímá, t. & T. Indápur,—720. 18 11 75 4

Kaḷús कळूस, on the Bám, Chákaṇ, Kheḍ,—A temple of Mahádeva called Káḷéshwar काळेश्वर; Rs. 5-13-5 is due on account of the half village held in partnership according to the Deshmukhí Akár; lapsed to Government in 1844-45, . . —887. 18 45½ 78 58½

Kalyáṇ कलयाण, *Kullian*, on the Shivagangá, Kheḍ-Báre, Havelí, —668. 18 20½ 73 49

Kamán कमान, *Kuman*, on the Bhímá, Chákan, Kheḍ; Jatrá of Rájá Mogal Devaon Paush Shuddh 15th, . —263. 18 55 73 53

Káṁbḷéshwar कांबळेश्वर, on the Nírá, Karyát-Bárámatí, Iṅdápur, —276. 18 3 74 30½

Káṁbré कांब्रे, Andar-Máwaḷ, Kheḍ,—The Isáfat village is of Watani Service; Rs. 88-4-8 is paid on account of Inám Tijái Nemṇuk,—272. 18 53 73 33

Káṁthaḍí कामथडी, Kheḍ-Báré, Havelí, —374. 18 15 73 57

Kándalgáṅw कांदलगांव, on the Bhímá. t. & T. Iṅdápur,—602. 18 6 75 12½

Káṅdaḷí कांदळी, on the Kukaḍé, Aḷé, Shivaner,--774. 19 9 74 8

Kángáṅw कानगांव, *Khangaon*, on the Bhímá, Páṭas, Bhimathaḍí,—Market on Mondays; lapsed to Government in 1826-27,—1009. 18 31 74 32½

Kánhé कान्हे, Náṇé-Máwaḷ, Máwaḷ. . . —255. 18 45½ 73 39

Kaṇhérsar कण्हेरसर, *Kunneisur*, t. & T. Kheḍ,—A hereditary Iṅam village,—Rs. 420-6-0 is due on account of Mokásá Deshmukhí Watan and other Nemṇuk, ... —543. 18 49 74 4

Kánhéwáḍí Khurd कान्हेवाडी खुर्द, *Kanhehwaree Kd.* Wáḍé, Khed, an Isáfat village is of Watani Service. Rs. 18-3-7 is due for Inám Tijái Nemṇuk, ... —38. 18 55 73 40½

Kánhéwáḍí Budrukh कान्हेवाडी बुदरूख, on the Bhímá, Wáḍé Kheḍ; an Isáfat village of Wataní Service; Rs. 50-1-10 is due on account of Inám Tijái Nemṇuk, . . —241. 18 56½ 73 52

Kánhéwáḍí कान्हेवाडी, on the Indráyení, Chákaṇ, Kheḍ,—pop. 65.
Lat. 18° 42½′ N. Long. 73° 47′ E.

Káṅsáré कांसारे, *Kasara*, Aḷé, Borí Peṭá, Shivaner,—262.
19 8½ 74 24

Kánsé कानसे, on the Ghoḍ, Ghoḍé, Kheḍ,—533. 19 4½ 73 50½

Kantee v. Káṭí.

Kánúr कानूर, t. & T. Pábaḷ, ... —1408. 18 50 74 11

Kará R. करा, *Kurra*, rises in Puraṅdar T. 18° 20′ 73° 57′
and flows S. E. past Sáswaḍ, and joins the Nirá 18 4 74 43

Karaṅdí करंदी, *Kurrundee*, Chákaṇ, Kheḍ,—833. 18 43½ 74 7½

Karaṅj करंज, *Kurroonj*, Pawan-Máwaḷ, Máwaḷ, 262. 18 42½ 73 36

Karaṅjáḷé करंजाळे, *Kurrunjaleh*, Maḍh-Khoré, Shivaner,—302.
19 20 73 54

Karaṅjé करंजे, Nirathaḍí, Puraṅdar; *Dekh. Sar.* App. D. p. 38,—
994. 18 8 74 21

Karanjgáṅv करंजगांव, Náṇé-Máwaḷ, Máwaḷ,—an Inám village,
Rs. 7-13-6 is due on the income of the attached Inám,—639.
18 48½ 73 36

Karaṅjavihiré करंजविहीरे, *Kurunjvehur*, Wáḍé, Kheḍ.—Lapsed to
Government in 1825-26, ... 161,—18 49 73 47

Karatee v. Karháṭí.

Kárégáṅv कारेगांव, *Kcregaon*, t. & T. Kheḍ,--an Inám village,—267
18 56½ 73 58

Kárháṭí काहाटी, *Karatee*, on the Kará, p. Supé, Puraṅdar,—an Inám
village,—Rs. 151-14-5 is paid for the Mokásá and Nim Chauthái
Akár, and Rs. 11-5-9 for Potdárí Nemṇuk, &c.—857. 18 15 74 29

Kárkhel कारखेल, Karyát-Sáswaḍ, Puraṅdar,—467. 18 17 74 34

Karkumba v. Khaḍkumba.

Kárkunḍí कारकुंडी, Wáḍé, Kheḍ, . . —150. 18 50 73 50

Kárlá or Kárlé, कारले, *Karlee*, *Carli*, &c., Náṇé-Máwaḷ, Máwaḷ;
1956 ft. above the sea, Market every Friday except during the mon-
soon; famous Buddhist caves in the hill;—*Balfour*, Barom. Sect.,
of India; *Hamilton*, Gazet.—'Carli;' *Thornton*, Gaz.—'Karlee;'
Lord Valentia, Voy. & Trav. Vol. II. pp. 100, 148-51, *M. Graham*,

Jour. of Res. in India; *Jacquemont*, Journal, tom. III. pp. 586-87; *Heber*, Journal, Vol. II. pp. 203-205; *Fergusson*, Rock-cut Temples, pp. 27-34, or Jour. R. Asiat. Soc. Vol. VIII. pp. 57-64, Hist. Architect. Vol. II. pp. 460, 464, 482, 484-89; *Wilson*, Jour. Bomb. B. R. Asiat. Soc. Vol. III. pt. II. pp. 48-50; *Grant Duff*, H. M. Vol. II. p. 367; *Erskine*, Bomb. Lit. Trans. Vol. II.,—pop. 487. Lat. 18° 45½′ N. Long. 73° 32′ E.

Karṅdí करंदी, *Kurndee*, Belhé, Brahmanwádá Peṭá, Shivaner,—141. 19 22½ 74 5

Karṅḍolí करंडोली, Náṇé-Máwaḷ, Máwaḷ,—an Isáfat village of Wataní service; Rs. 127-14-10 is due according to the Inám Tijái Akár, ... —141. 18 46½ 73 31½

Kásárí कासारी, *Kasare*, on the Bám, Wáḍé, Kheḍ,—78. 18 53 73 43½.

Kásársai कासारसई, *Kasser Saee*, on the Rautwáḍe, t. & T. Havelí, —599. 18 37 73 44½

Kashéḷé कशेळे, Andar-Máwaḷ, Kheḍ, —276. 18 52 73 39

Kassowlee v. Kusawlí.

Kásurḍí कासुर्डी, Sánḍas, Bhimathaḍí, —276. 18 28 74 17½

Káṭáḷveḍhé काटाळवेढे, *Katalwáda*, Belhé, Borí Peṭá, Shivaner,—574 19 13½ 73 16

Káṭápur Khurd काटापुर खुर्द, on the Ghoḍ, Avsarí, Pábaḷ,—76 18 59 74 11

Kátarkhaḍak कातरखडक, Pawan-Máwaḷ, Máwaḷ,—424. 18 36½ 73 38

Káṭéḍ काटेड, *Katehra*, on the Miná, Havelí, Shivaner,—178. 19 9 73 54

Katehra v. Káṭeḍ.

Kátí काटी, *Kantee*, t. & T. Iṅdápur, . . —766 18 1½ 75 0

Kaṭphaḷ कटफळ, *Kutpool*, Karyát-Bárámatí, Indapur,—an old temple of Jánái Deví; Jatra held in her honour in Ashwin Shuddh 15th; Market on the Jatrá day, ... —750 18 13½ 74 41

Kátraj कात्तज, at the foot of Kátraj Ghát, t. & T. Havelí,—815 18 24 73 56½

Katroor v. Kotharud.

Kátví कातवी, on the Indráyení, Náṇé-Máwaḷ, Máwaḷ,—pop. 102
Lat. 18° 45′ N. Long. 73 43′ E.
Kauṭavḷí कौटवळी, *Kowtullee*, t. & T. Iṅdápur,—338. 18 · 8½ 74 58
Kavḍhé कवढे, *Kownteh*, t. & T. Pábaḷ, . —1802. 18 54 74 14
Keḍgáṅv केडगांव, *Kairgaon*, Páṭas, Bhimathaḍí,—Market on Wednesdays, ... —1007. 18 28 74 25
Keekwee v. Kikví.
Keisnud v. Kesnaṅd.
Keḷawḍé केळवडे, Kheḍé-Báré, Havelí,—a Saranjám village,—541. 18 16 73 57
Keḷgáṅv केळगांव, on the Indráyení, Chákaṇ, Kheḍ,—an Inám village, Rs. 148-2-9 is paid on the Deshmukhí and farm of pasture,—256. 18 41 73 57
Keḷí केळी, Kukaḍnehér, Shivanér, ... 19 14 73 49½
Keḷí केळी, Votúr, Brahmanwáḍa, Shivaner,—365. 19 23 74 2
Keṅdúr केंदुर, t. & T. Pábaḷ,—a Jahágír,—2736. 18 46½ 74 6
Keṅjaḷ केंजळ, Nirathaḍí, Puraṅdar, . . —437. 18 11½ 74 0½
Keṅwáḍí केंवाडी, on the Kukaḍe, Kukaḍnehér, Shivanér, —106. 19 15 73 50
Kesnaṅd केसनंद, *Keisnud*, Sánḍas, Bhimathaḍí,—624. 18 34 74 5
Kesure v. Kheṅcharé.
Ketakvaḷé केतकवळे, *Kateekowla*, Kheḍé-Báré, Havelí,—an Inám,—207 18 16 74 1
Kewla v. Kivḷé.
Khaḍkáḷé खडकाळे, *Khurkaleh*, a railway station, Náṅé-Máwaḷ, Máwaḷ, ... —359. 18 45½ 73 36½
Khaḍakwáslé खडकवासले, *Khurrukwasla*, near the Muṭá, t. & T. Haveli, ... —822. 18 25½ 73 50½
Khaḍkí खडकी, *Khirkee*, t. & T. Haveli,—The scene of the defeat of the Maráṭhás in Nov. 1817; *Grant Duff*, Vol. III. pp. 423-27; *Fitzclarence*, Journal pp. 278-79, 293—302,—561. 18 33½ 73 55
Khaḍkí खडकी, *Kurkee*, on the Ghoḍ, Mahálungé, Pábaḷ,—380. 19 0 74 3½

Khaḍkí खडकी, *Khirkee*, Páṭas, Bhimathaḍí,—pop. 734.
Lat. 18° 20′ N. Long. 74° 19′ E.

Khaḍkumba खडकुंब, *Karkumba*, *Khurkoombeh*, Kukaḍneher, Shivaner, ... —91. 19 15 73 47½

Khairé खैरे, *Khiree*, Kukaḍnehér, Shivanér,—35. 19 17 73 49½

Khaḷad खलद, *Khulud*, on the Kará, Karyát-Sáswaḍ, Purandar,—a Saranjam village,—*Dekh. Sar.* App. M. p. 2,—990. 18 19 74 8

Khálumbré खालउंब्रे, *Kal Ombreh*, on the Indráyení, Chákaṇ, Kheḍ, —a Saranjám village, ... —207. 18 45 73 50

Khámgáṅv Budrukh खामगांव बुदरूख, on the Muṭá-Muḷá, Sánḍas, Bhimathaḍí.—Lapsed to Government in 1845-46,—502. 18 32½ 74 17

Khámgáṅv खामगांव, Havelí, Shivanér, . —259. 19 14 73 53

Khámgáṅv खामगांव, Karyát-Máwaḷ, Havelí,—678. 18 21 73 44

Khámgáṅvṭek खामगांवटेक, Sánḍas, Bhimathaḍí —Lapsed to Government in 1826-27, ... —219. 18 32 74 13½

Khámshet खामशेत, on the Indráyení, Náṇe-Máwaḷ, Máwaḷ,—93. 18 45½ 73 36

Khánápur खानापुर, Havelí, Shivanér, . —283. 19 10½ 73 58

Khánápur खानापुर, Karyát-Máwaḷ, Havelí,—688. 18 24 73 45½

Khánawḍí खानवडी, *Khanowree*, on the Kará, Karepaṭár, Purandar,—a Saranjám village, *Dekh. Sar.* App. B. p. 92,—489. 18 19½ 74 9

Khánawṭé खानवटे, on the Bhímá, Páṭas, Bhimathaḍí,—an Inám village, ... 384. 18 19 74 53

Kháṅḍ खांड, Andar-Máwaḷ, Kheḍ, . . —212. 18 55 73 32

Khaṅḍáḷé खंडाळे, *Khandala*, Náṇé, Máwaḷ, Máwaḷ; *Hamilton*, Gazet. 'Candalla'; *Thornton*, "Kundala"; *Jacquemont*, Journal, tom. III. p. 608-9; *Heber*, Jour. Vol. II. pp. 200-202; *Lord Valentia*, Voy. & Trav. Vol. II. pp. 101, 155, ... 812. 18 55½ 73 25½

Kháṅḍsí खांडसी, Náṇé-Máwaḷ, Máwaḷ,—a Saranjám village,—Rs. 44-2 is due to Government on account of Mokásá Nemṇuk,—161 18 47½ 73 32½

Kháṅgáṅv खानगांव, on the Míná, Minnéher, Shivanér,—271. 19 11½ 73 52½

Khanowree v. Khánawḍí.

Kharáḍí खराडी, *Khuradee*, on the Muṭá-Muḷá, t. & T. Havelí,—pop. 226. Lat. 18° 32½′ N. Long. 74° 1′ E.

Kharawlí खरवली, on the Bám, Wáḍé, Kheḍ,—56. 18 55½ 73 39½

Kharpuḍ खरपुड, *Khurpoor*, Wáḍé, Kheḍ,—131. 18 59½ 73 39

Kharpuḍí खरपुडी, *Kurpooree*, on the Bhímá, t. & T. Kheḍ,—551. 18 48½ 73 58

Kharpuḍí खरपुडी, Chákaṇ, Kheḍ, . . —145. 18 48½ 73 58

Khároṅchí खारोंची, *Kharochee*, on the Nirá, t. & T. Iṅdápur,—927. 17 58 74 55½

Kharoshí खरोशी, *Kurosee*, on the Bhimá, Wáḍé, Kheḍ,—an Inám village, ... —344. 19 1 73 44

Khaṭkáḷé खटकाळे, *Khutkaleh*, Kukáḍnéher, Shivanér,—54. 19 17 73 50½

Khéḍ खेड, *Kheir*, on the Bhimá, t. & T. Kheḍ.—Has a temple of Viṣhṇu,—Jatrá held on Shráwaṇ Vad 8th in his honour,—Market on Sundays,—*Thornton*, Gazet.—'Kheir,'—4954. 18 51 73 56

Kheḍsivápur खेडसिवापुर, on the Savaganga,—Kheḍ-Báré, Havelí—a hereditary Inám; Rs. 64-2-3 is due to Government on account of the farm of Tamarind and Bor trees sold every year,—Market on Fridays, ... —1673. 18 20 73 54

Kheir v. Kheḍ.

Kheṅcharé खेंचरे, *Kesure*, Pauḍh-Khore, Máwaḷ,—644. 18 29½ 73 38

Khiree v. Khairé.

Khiréshwar खिरेश्वर, Maḍkhoré, Shivanér,—111. 19 22 73 53

Khirkee v. Khaḍkí.

Khowbowlee v. Khubawli.

Khoḍad खोडद, on the Miná, Náráyaṇgáṅv, Pábaḷ,—1158. 19 3½ 74 6½

Khootbawee v. Khuṭbáw.

Khor खोर, Karépaṭár, Puraṅdar.—Lapsed to Government in 1839-40 . . . . . —738. 18 24 74 23

Khorawḍí खोरवडी, *Kurrooda*, Páṭas, Bhimathaḍí,—215. 18 27 74 41

Khubawlí खुबवली, *Khobowlee*, Pauḍh-Khoré, Mawaḷ,—204.
Lat. 18° 33′ N. Long. 73° 39′ E.

Khubí खुबी, Maḍkoré, Shivanér, ... 19 20½ 73 53

Khulad v. Khaḷad.

Khulas v. Kaḷas.

Khuṅṭé खुंटे, *Kootah*, on the Nírá, Phalṭan, Puraṅdar,—320.
18 3½ 74 28

Khuradee v. Kharáḍí.

Khurkaleh v. Khaḍkáḷé.

Khurpoor v. Kharpuḍ.

Khurrukwasla v. Khaḍakwáslé.

Khuṭbáw खुटबाव, *Khootbawee*, Páṭas, Bhimathaḍí,—353.
18 30½ 74 23

Kikwí किकवी, *Keekwee*, Nirathaḍí, Puraṅdar,—Market on Saturdays, —1151. 18 12½ 74 0½

Kirkaṭwáḍí किरकटवाडी, Karyát-Máwaḷ, Havelí.—The Isafat village is of Wataní service,—Rs. 156-1-10 paid on account of the Nemṇuk, Inám Tijái and Ambráí land, —227. 18 26½ 73 51½

Kivḷé किवळे, *Kewleh*, on the Aṅdar, Aṅdar-Máwaḷ, Kheḍ,—386.
18 52½ 73 37

Kivḷé किवळे, on the Pawaná, t. & T. Havelí,—582. 18 39 73 47

Kivḷé किवळे, *Kewla*, Chákaṇ, Kheḍ, —332. 18 51½ 73 52½

Koḍhit कोढित, *Korheet*, on the Kará, Karépaṭár, Puraṅdar,—a Saraṅjám,—*Dekh. Sar.* App. m. p. 2, —1195. 18 20½ 74 2½

Koheh v. Koyé.

Kokaḍí R. *Kokuree*, rises near Náná Ghát, Kukaḍneher, Shivaner,
19 18 73 45
is joined by the Pushpávatí at Hiṅvré Budrukh, and joins the Ghoḍ river in Karḍé, Aḥmadnagar—*Thornton* Gaz. "Kokree"
18 51 74 22

Kolawḍí कोलवडी, *Kolowree*, on the Muṭá-Muḷá, Sánḍás, Bhimathaḍí. . . . . —788. 18 31½ 74 6

Koḷawáḍí कोळवाडी, or Kolhewádí, Maḍkoré, Shivaner,—172.
19 21 73 55

Koḷawtí कोळवती, *Kolowtee*, Pauḍh-Khoré, Máwaḷ,—76. Lat.
18 36½ 73 28½

Kolhárwáḍí कोलहारवाडी, on the Yel, t. & T. Kheḍ,—an Inám village, ... —121. Lat. 18° 58′ N. Long. 73° 56½′ E.
Kolharwarree v. Kolhéwáḍí.
Kolhéwáḍí कोल्हेवाडी, *Kolhárwadi*, Maḍkhoré, Shivaner,—123. 18 18 73 57
Koḷiye कोळिये, on the Bám, Wáḍé, Kheḍ,—an Inám village,—317. 18 53½ 73 41
Kolowree v. Kolavḍí.
Kolowttee v. Koḷavlí.
Kolatavḍé कोलतवडे, on the Ghoḍ, Aṁbégáṅv, Kheḍ,—264. 19 6 73 47
Koḷviré or Kolvira, कोळविरे, T. Supé, Puraṅdar,—an Inám village, Sar Deshmukhí and Nemṇuk for other Bábs Rs. 96-2-8,—426. 18 15 74 15
Kondana v. Singaḍ.
Koṅḍápurí or Koṅḍápur, कोंडापुरी, t. & T. Pábaḷ,—Traveller's bangala—1870 feet above the sea, *Balfour* Barom, Sections of India; *Jacquemont*, Journal, tom. III. p. 543, 533. 18 44 74 15½
Koṅḍhavé Khurd कोंढवे खुर्द, *Kondweh*, on the Múṭá, t. and T. Havelí, ... —260. 18 27 73 50½
Koṅḍhavé Budrukh कोंढवे बुद्रुख, t. & T. Havelí,—672. 18 27 73 56½
Koṅḍhavḷé कोंढवळे, Pauḍh-Khoré, Máwaḷ,—429. 18 31 73 39
Koṅḍhavḷé कोंढवळे, Aṁbégáṅv, Kheḍ,—364. . 19 6½ 73 36½
Koṅḍharé कोंढर, Aṁbegáṅv, Kheḍ, . . —80. 19 9 73 44
Koṅḍhé Dhávḍé कोंढे धावडे, Karyát-Máwaḷ, Havelí.—949. 18 27 73 52
Koṅdivḍé कोंडिवडे, *Kondewreh*, Náṇe-Máwaḷ, Máwaḷ,—An Inám village, ... —165. 18 48 73 36½
Koṅḍhivḍé कोंढिवडे, on the Aṅdar, Aṅdar-Máwaḷ, Kheḍ,—145. 18 50 73 40
Kondweh, v. Konḍhavé Khurd.
Kootah v. Kunṭé.
Koparé कोपरे, Wotúr, Bráhmaṇwáḍá Peṭá, Shivaner,—123. 19 21 73 56½

Koparé कोपरे, on the Muṭá, Karyát-Máwaḷ, Haveli,—pop. 144.
Lat. 18° 25½′N. Long. 73° 49′E.

Koraḍwoholı कोरडवोहोळ, Haveli, Shivanér, . . 19 13½ 73 58

Koralla, v. Korháḷé.

Korégáṅv Bhivar कोरेगांव भिवर, on the Bhímá, Sánḍas, Bhimathaḍí, ... —63. 18 37½ 74 21

Korégáṅw Khurd कोरेगांव खुर्द, on the Bám, Chákaṇ, Kheḍ; an Inám; the pasture land belongs to Government. 18 49 73 52

Korégáṅw Budrukh कोरेगांव बुदरूख, on the Bám, Chákaṇ, Kheḍ. —191. 18 49 73 5½

Korégáṅw कोरेगांव, *Korigaon*, on the Bhimá, t. & T. Pábaḷ.—The village is a Jahágír,—Rs. 0-15-4 is due as Nemṇuk for a goat on the Dasrá Holidays.—Here Captain Staunton with less than 1,000 men repulsed nearly 20,000 of the Peshwá's troops, 1st Jan. 1818. There is an obelisk in memory of those killed in the action.—*Grant Duff*, Vol. III. p. 432-37; *Thornton*, Gaz. 'Corygaum;' *Jacquemont*, Journal, tom. III. pp. 543-44; *Fitzclarence*, Journal, pp. 268-74. . . . . —1082. 18 38½ 74 7

Korégáṅwmúḷ कोरेगांवमूळ, on the Muṭá-Muḷá, Sanḍas, Bhimathaḍí, —214. 18 31½ 74 11

Korháḷé Budrukh कोऱ्हाळे बुदरूख, P. Supé, Puraṅdar,—840. 18 7½ 74 27½

Korháḷé Khurd कोऱ्हाळे खुर्द, *Koralla*, on the Nirá, P. Supé, Puraṅdar, ... —258. 18 5 74 26

Korheet, v. Koḍhit Budrukh. *Korheh*, v. Kuḍé.

Koṭápur Budrukh कोटापुर बुदरूख, on the Ghoḍ, Avasarí, Pábaḷ, —364. 18 58½ 74 10½

Kothaḷé कोथळे, on the Kará, P. Supé, Puraṅdar,—857. 18 19 74 13

Kotharúḍ कोथरूड, *Kotroor*, t. & T. Haveli,—1079. 18 30 73 53

Koṭhé Khurd कोठे खुर्द, on the Muḷá, Belhé, Shivaner.—Acquired by Government in 1836, ... —219. 19 22 74 12

Koṭhé Budrukh कोठे बुदरूख, on the Muḷá, Belhé, Bráhmaṇwáḍá-Peṭá, Shivaner, ... —364. 19 21½ 74 13

Koṭérí कोटेरी, on the Muṭá, Pauḍh-Khoré, Máwaḷ. 18 38 73 27½

Kowtullee v. Kautavlí. *Kownteh* v. Kavḍhé.

Koyáḷí कोयाळी, on the Bhímá, Wáḍé, Kheḍ.—pop. 183.
Lat. 18° 58′N. Long. 73° 49′E.

Koyáḷí कोयाळी, *Koyellee*, on the Bhímá, Chákaṇ, Kheḍ,—821.
18 42½ 74 2½

Koyé कोये, *Koheh*, Chákaṇ, Kheḍ.—An Inám village.—Mokásá Nemṇuk,—Rs. 101-14-8. . . . . —177. 18 51 73 49½

Kuḍé Budrukh कुडे बुदरूख, Wáḍé, Kheḍ,—272. 18 58 73 42½

Kuḍé Khurd कुडे खुर्द, *Koreh*, Wáḍé, Kheḍ,—156. 18 57½ 73 44

Kuhinde kd., v. Kuṅhidé Khurd.

Kuhoo, v. Kahú.

Kullian, v. Kalyáṇ.

Kullumba, v. Kaḷaṁb.

Kullumshet, v. Kaḷaṁshet.

Kullus, v. Kaḷas.

Kuṁbhárgáṅw कुंभारगांव, *Koombargaon*, on the Bhímá, t. & T. Iṅdápur. . . . . —423. 18 16½ 74 51

Kuṁbhárvaḷaṇ कुंभारवळण, *Koombarwullun*, on the Kará, P. Supé, Puraṅdar ; an Inám village ; Nemṇuk of Aṁbaráí land,—Rs. 17-9-1. --382. 19 20½ 74 8

Kuṁbhérí कुंभेरी, *Koombehree*, on the Muṭá, Pauḍh-Khoré, Máwaḷ, —174. 18 36 73 26½

Kuṁbhosí कुंभोसी, Khedé-Báré, Haveli,—an Inám village ; farm of pasture lands Rs. 14. . . . . —124. 18 15 74 1

Kuman, v. Kaman.

Kumshet कुमशेत, *Koomsheit*, on the Kukaḍé, Haveli, Shivaner,—353· 19 12 73 58½

Kuṇé Budrukh and Khurd कुणे, on the Andar, Andar-Máwaḷ, Kheḍ, ... —154. 18 54½ 73 35½

Kuṇé कुणे, at the Paira-Ghát, Nane-Mawaḷ, Máwaḷ,—174. 18 46½ 73 26

Kuṅjargaḍ Fort, कुंजरगड, *Hamilton*, Gazet. 'Koonjurghur'; *Hamilton*, Hindustán, II. p. 181. . . . . 19 23 74 1

Kuṅhiḍé Budrukh कुंहिडेबुदरूख, *Kuhinde Bk.*, Wáḍé, Kheḍ,—379. 18 54 73 49

Kunhidé Khurd कुंहिडे खुर्द, *Kuhinde Kd.*, on the Bám, Wáḍé, Kheḍ. . . . . —120 18 56 73 40½

Kunneisur v. Kaṇhérsar.

Kuraṇ कुरण, *Kooran*, Haveli, Shivaner. —132. 19 10 73 59½

Kuravlí कुरवली, *Koorowlee*, on the Nírá, t. & T. Iṅdápur,—pop. 350.
Lat. 18° 1½′N. Long. 74° 48½′E.

Kurda v. Kaḍhadé. *Kurdheh* v. Kaḍadhé.

Kurkee v. Khaḍkí.

Kurkuṁb कुरकुंब, *Koorkoomb*, Páṭas, Bhimathaḍí,—An old temple; Jatrá held on Ashwin Shuddh 1st and the following nine days in honour of Phirgáí Deví; Market on Tuesdays,—758.
18 23½ 74 36

Kurkuṅḍi कुरकुंडी, Chákaṇ, Kheḍ, . . —592. 18 51 73 50½

Kuraḷí कुरळी, *Koorullee*, Chákaṇ, Kheḍ,—a hereditary Inám village; Deshmukhí Nemṇuk, Rs. 10-1-9, . . —407. 18 43 73 54

Kur- see Kar.-

Kurpooree, v. Kharpuḍí. *Kurroochee*, v. Kharoshí.

Kurrooda, v. Khoravḍí.

Kurroos, v. Kaḍús.

Kurwaṅḍí कुरवंडी, *Kurwundee*, t. & T. Kheḍ.—Jatrá held on Jeṣhṭh Vad 5th in honour of Chámbháí Deví, . —430. 18 58 73 55

Kuravaṅḍé कुरवंडे, *Kurrounda*, on the Indráyeṇí, Náṇé-Máwaḷ, Máwaḷ, ... —373. 18 43½ 73 26

Kusavlí कुसवली, *Kassowlee*, Andar-Máwaḷ, Kheḍ,—164.
18 52 73 34

Kusgáṅv कुसगांव, *Koosgaon*, Pawan-Máwaḷ, Máwaḷ.—An Inám village, ... —258. 18 36½ 73 43

Kusgáṅv Budrukh कुसगांव बुदरूख, Náṇé-Máwaḷ, Máwaḷ,—170.
18 44 73 29

Kusgáṅv Khurd कुसगांव खुर्द, *Koosgaon Khoord*, Náṇé-Máwaḷ, Máwaḷ, ... —75. 18 44 73 36½

Kushégáṅv कुशेगांव, *Koosehgaon*, Páṭas, Bhimathaḍi,—519.
18 23 74 29½

Kushéré Budrukh कुशेरे बुदरूख, on the Ghoḍ, Aṁbégáṅv, Kheḍ.
—111. 19 8 73 42½

Kushéré Khurd कुशेरे खुर्द, *Koosehreh*, on the Ghoḍ, Aṁbégaṅv, Kheḍ. . . . . —218. 19 8 73 43

Kusúr कुसूर, *Koosoor*, Haveli, Shivaner. The rear part of the Fort of Shivaner is within the limit of this town, and is used as a store

for grain. There is a temple of Shivábáí, built by the Peshwa. pop. 417. Lat. 19° 12½′N. Long. 73° 55′E.

Kusúr कुसूर, at the top of Kusúr Ghát, Andar-Mawal, Kheḍ.—403. 18 54 73 30½

Kutpool, v. Katphal.

Lákaḍí लाकडी, t. & T. Iṅdápur. . . . —602. 18 11 74 45

Lákhaṇgáṅv लाखणगांव, on the Ghoḍ, t. & T. Pábal. A Jahágir; Mokásá Nemṇuk is Rs. 349-0-8. . . . —627. 18 58 74 12½

Lásurṇé लासुर्णे, *Lahasoorneh*, t. & T. Iṅdápur,—Hamlets Belawáḍí, Kaḍabanwáḍí, and Khairyachiwáḍí, &c—1757. 18 5 74 50

Láṭé लाटे, on the Nírá, P. Supé, Puraṅdar—A Saranjám village; the Nim Chauthai and other Babs is Rs. 130-10-8—211. 18 4 74 28

Lavháḷí लव्हाळी, *Lowhali*, Votur, Bráhmaṇwáḍá Peṭá, Shivaner.—91. 19 24½ 73 52½

Lavḷé लवळे, *Lowla*, near the Muḷá, t. & T. Havelí,—An Isafut village of Wataní Service, the Sar Deshmukhí Nemṇuk is Rs. 218-11-3;—with a pagoda, . . . —1037. 18 32 73 45

Leemboree v. Nimboḍí. *Leembsakur* v. Nimbsákhar.

Lingdeva लिंगदेव, Karḍé, Shivaner, . . —504. 19 26½ 74 8

Lohagaḍ लोहोगढ, A hill fort 1,200 feet above the plain with a sheer scarp of 200 feet; taken by Malik Aḥmad from the Maráṭhas in A. D. 1485, and by Siváji in 1648, and again in 1670. Here the widow of Náná Phaḍnavis took refuge 12th November 1802. It was twice taken by the English. *Grant Duff*, Hist. Mar. Vol. I. pp. 73, 140, 217, & 244; *Thornton*, Gaz. 'Loghur;' *Lord Valentia*, Trav. Vol. II. pp. 148, 151-55, 157, ... 18 42½ 73 32

Lohogáṅv लोहोगांव, *Lhogaum*, t. & T. Havelí. 958. 18 35 73 59

Lohowáḍí लोहोवाडी, Náṅé-Máwal, Máwal, —208. 18 42½ 73 33

Loṇávḷé लोणावळे, on the Indráyeṇi, Náṅé-Máwal, Máwal; a railway station. . . . . —102. 18 44½ 73 28

Loṇí लोणी, t. & T. Iṅdápur, ... —785. 18 12 74 58½

Loṇí लोणी, t. & T. Pábal, ... —1405. 18 54 74 9½

Loṇí लोणी, t. & T. Havelí,—*Hamilton*, Gazet. 'Loonee.'—1894. 18 29 74 5

Loṇí लोणी, *Loonee*, P. Supé, Puraṅdar, —2178. 18 13½ 74 26½

Loṇí लोणी, Sánḍas, Bhimathaḍí, with Traveller's bangala. A Saran-jám village; 1729 feet above the sea; *Balfour*, Barom. Sect. of India; *Hamilton*, Gazet. 'Lony' and 'Loonee'; *Trans. Lit. Soc. Bomb.* Vol. III. pp. 172 and seqq.; *Jacquemont*, Journal, tom. III. p. 543 . . . . . pop. 782. Lat. 18° 37′N. Long. 74° 5′E.

Lowhali v. Lavhálí. *Lowla* v. Lavḷé.

Lumówáḍi लुमेवाडि, on the Nírá, t. & T. Indápur,—168. 17 54 75 6

Madanwáḍi मदनवाडि, *Mudhunwaree*, t. & T. Indápur,—397. 18 18½ 74 48

Maḍh मढ, *Murh*, near the Pushpávati, Maḍh-Khoré, Shivaner; Market on Saturdays; *Thornton*, Gaz. 'Mhur.'—648. 19 19 73 55

Máhágáṅv माहागांव, Pawan-Máwaḷ, Máwaḷ.—439. 18 42½ 73 34½

Máháḷuṅgé माहाळुंगे, Máháḷuṅgé, Kheḍ. An Inám village; Market on Mondays. . . . . —752. 18 47 73 51½

Máháḷuṅgé माहाळुंगे, on the Ghoḍ, Ghoḍé, Kheḍ—Market on Mondays. —125. 19 5½ 73 49

Máháḷuṅgé माहाळुंगे, Máháḷuṅgé, Pábaḷ. —1468. 19 4 73 59½

Máháḷuṅgé माहाळुंगे, on the Mulá, Karyat-Máwaḷ, Haveli.—372. 18 34½ 73 49

Mahan v. Mán. *Mahmood Wadee* v. Muhammadwaḍí.

Máhúr माहूर, Nirathaḍí, Puraṅdar. . . —544. 18 11½ 74 7½

Mahurí महरि, on the Nila, Pauḍh-Khoré, Máwaḷ. 18 29 73 30

Majagáṅv माजगांव, on the Bhímá, Wáḍé, Khed. . 18 59 73 47½

Maḷad मळद, *Mullud*, on the Kará, Karyát-Bárámatí, Indapur.—208. 18 7½ 74 38

Maḷaḍ मळद, *Mullut*, Pátás, Bhimathaḍí. A Jahagir; pays Rs. 252-5-8 as one-fourth of the rent of Mokasa land. —542. 18 22 74 37

Málakheḍ मालखेड, on the Mutá, Karyát-Máwaḷ, Haveli,—176. 18 23½ 73 46½

Maḷavlí मलवली, on the Indrayeni, Nane-Mawaḷ, Mawaḷ. 18 45 73 33½

Maḷavlí मलवली, *Milowlee*, on the Páwaná, Pawan-Mawaḷ, Mawaḷ,—112. 18 41½ 73 37

Málé माले, Pauḍh-Khoré, Máwal, . . —461. 18 31½ 73 35

Málégáṅw मालेगांव, Karyát-Bárámatí, Puraṅdar ; a hereditary Saranjam village . —pop. 1487. Lat. 18° 7½′N. Long. 74° 34½′E.
Málégáṅw मालेगांव, P. Supé, Puraṅdar ; an Isafut village of Watani service, ... —185. 18 8½ 74 34½
Málégáṅw मालेगांव, Andar-Máwaḷ, Kheḍ, —215. 18 56 73 33
Málégáṅw Kh. मालेगांव, Ander-Máwaḷ, Kheḍ,—233. 18 55 73 35
Máléwádí मालेवाडी, Náṇé-Máwaḷ,—Máwaḷ, —94. 18 42¼ 73 33
Màḷiṅ माळिण, Ambégáṅv, Kheḍ, . . —263. 19 10 73 45½
Maloonga v. Máháḷuṅgé.
Málsej Ghát. *Thornton*, Gaz.—'Malseij' . . . 19 20 73 51
Máḷsiras माळसिरस, P. Supé, Puraṅdar.—An old temple of Bhuléshwar Deva on a hill, the stone idols of which were destroyed by the Mughuls ; a Jatrá is held on the last Monday in Shrawaṇ ; it is an Inám village ; the Zilla Báb Mokásá and Tiḷ Sankránt Nemnuk, is Rs. 681-0-2. . . . . —1030. 18 24½ 74 17
Málṭhaṇ मालठण, *Multhun*, on the Bhímá, Páṭas, Bhímathaḍí,—543. 18 23½ 74 46½
Málusté मालुस्ते, Paudh-Khoré, Máwal. —185. 18 38½ 73 26½
Mán मान, *Mahan*, near the Muḷá, t. & T. Havelí ; an Inám. 949. 18 34 73 46
Maṅchar मंचर, *Muncher*, Maháḷuṅgé, Pabáḷ.—A Jaháger ; Market on Sundays ; Mokásá Nemṇuk.—Rs. 481-8-7, and Kuraṇ Maktá Rs. 141 . . . . . —2875. 19 1 74 1
Máṅdarṇé मांदर्णे, Wotúr, Bráhmaṇwáḍá-Peṭá, Shivaner. A Saranjam ; the Mokásá and Watan (attached) is Rs. 72-6-9. 19 17½ 74 2
Máṅdéḍa मांदेड, *Mandehra*, Pauḍh-Khoré, Máwaḷ,—410. 18 29½ 73 38
Máṅḍhar मांढर, Nirathaḍí, Puraṅdar, —458. 18 13 74 5
Máṅḍkí मांडकी, P. Shirvaḷ, Puraṅdar ; A Saranjám village. 374. 18 8½ 74 12
Maṅdoshí मंदोशि, *Mundosee*, Wádé, Khed,—234. 19 2½ 73 41
Máṅḍvé माडवे, Wotúr, Bráhmanwádá-Petá, Shivaner.—167. 19 20 73 59
Máṅḍví मांडवी, Karyát-Máwaḷ, Havelí. —333. 18 25 73 46

Maṅgrúḷ मंगरूळ, Náṇé-Máwaḷ, Máwaḷ,—pop. 120.
Lat. 18° 47′N. Long. 73° 43′E.

Maṅgrúḷ मंगरूळ, *Mungrool*, on the Kukaḍé, Ale, Bori-peṭa, Shivaner, —543. 19 3 74 13½

Máṇikḍoho माणिकडोहो, on the Kukaḍe, Kukaḍneher, Shivaner, —211. 19 13½ 73 53

Máṅjarí मांजरी, on the Muṭá Muḷá, t. & T. Havelí; *Dekh. Sar.* App. H. pp. 3, 8, 11, 12. . . . . —1170. 18 32 74 3

Máṇkéshwar माणकेश्वर, on the Kukaḍé, Kukaḍneher, Shivaner,—87. 19 14 73 50

Máṇkulí माणकुली, Andar-Máwaḷ, Kheḍ, . . . 18 54½ 73 36½

Manyáḷé मन्याळे, *Munyale*, Votur, Bráhmaṇwáḍá-Peṭá, Shivaner, —159. 19 24 74 6

Mápolí मापोली, Ghoḍé, Kheḍ, ... 19 4½ 73 48½

Márkaḷ मरकळ, *Murkul*, on the Bhímá, Chákaṇ, Kheḍ; a temple of Márutí. 718. 18 40 74 3

Máruṅjí मारूंजी, Karyát-Máwaḷ, Havelí, —537. 18 36½ 73 46

Másgáṅv मासगांव, Pauḍh-Khoré, Máwaḷ. . . 18 36 73 26

Máú माऊ, *Mawoo*, Náṇé-Máwaḷ, Máwaḷ; an Inám village,—367. 18 50 73 38

Máwaḍí मावडी, *Mawuree*, Karépaṭár, Purandar,—813. 18 20½ 74 16

Máwaḍí मावडी, P. Supé, Puraṅdar . . —461. 18 16 74 18

Máwaḷ taluká मावळतालुका; the glens are called Khoras; the tract to the South of the Sávitri River is called Heṭ. or "lower." The Mawalis and Heṭkaris were long the best Maráṭha soldiers { 18 25½ 73 23 / 18 55 73 45

Mawoo v. Máú.

Meḍad मेडद, *Merud*, on the Kará, Káryát-Bárámatí, Indápur;—*Hamilton*, Gazet. 'Merud,' . . . . —535. 18 10 74 36

Meeroodee v. Mirawḍí

Megholí मेघोली, *Mehgholee*, on the Ghoḍ, Ambégáṅv, Kheḍ,—192. 19 7 73 44½

Mekhaḷí मेखळी, on the Nírá, Karyát-Bárámatí, Indápur,—367. 18 3 74 40

Mháḷuṅgé म्हाळुंगे, on the Ghoḍ, Ambégáṅv, Kheḍ,—
Lat. 19° 7½′N. Long. 73° 41′E.

Mhawuree v. Mávdí. *Milowlee* v. Maḷavlí.

Mirawḍí मिरवडी, *Meeroodee*, on the Muṭá-Muḷá, Sáṅḍas, Bhimathaḍi, ... —142. 18 32 74 14

Moḍhavé मोढवे, *Morweh*, Karyát-Sáswaḍ, Puraṅdar,—689. 18 12½ 74 20

Moduleh v. Muḍhaḷé.

Mohokal मोहोकल, on the Bhímá, t. & T. Kheḍ.—A Saranjám village, ... —175. 18 56 73 52½

Moí मोइ, Chákaṇ, Kheḍ, ... —252. 18 42 73 53

Mokhuee v. Mukhaí. *Moolapoor* v. Muḷápur.

Morgáṅv or Moreshwar मोरगांव, on the Kará, Karépaṭár, Purandar —An old temple of Gaṇapatí; Jatrá held on his account on Bhádrapad Shuddh 5th; Fair held from Bhádrapad Shuddh 4th to Ashwin Shuddh 10th; an Inám village. *Hamilton*, Gazet. 'Moreishwar'; *Moor*, Hindu Pantheon, ... —981. 18 16½ 74 22½

Morosí मोरोसी, on the Bhímá, Wáḍé, Kheḍ,—182. 19 2 73 41

Morweh v. Moḍhavé.

Moshí मोशी, *Moseh*, on the Musá, t. & T. Havelí; lapsed to Government in 1828-29; *Thornton*, Gaz. 'Moseh,'—648. 18 23 73 38

Muddhunwaree v. Madanwáḍí.

Muḍhaḷé मुढळे, *Moduleh*, P. Supé, Purandar,—722. 18 11 74 27

Muhammadwáḍí महमदवाडी, t. & T. Havelí.—An Inám village; the Inám Tijáí &c. is Rs. 245-15-8. . . —740. 18 28 73 59

Mukhaí मुखई, *Mokhuee*, on the Yel, t. & T. Pábaḷ,—An Inám village; the Mokásá Nemṇuk is Rs. 194-5-10—581. 18 44½ 74 10

Muḷá R. मुळा, *Moola R.* rises in Mávaḷ 18 40 73 27
and joins the Muṭá at Puṇá 18 32 73 55½

Muḷá R. मुळा, *Moola*, rises in Aṅkola, Ahmadnagar 19 26 73 45
and flows through part of Shivaner, and Rahurí joining the Praurá; *Thornton*, Gaz. 'Moola.' 19 31½ 74 54

Muḷápur मुळापुर, *Moolapoor*, Pauḍh-Khoré, Máwaḷ,—156. 18 34½ 73 27½

Muḷkhed मुळखेड, on the Muṭá, t. & T. Havelí,—182. 18 23½ 73 45½

Muḷkí मुळकी, Havelí, Shivaner. . Lat. 19° 14½′N. Long. 73° 54½′E.
Mu-. v. Ma-.

Muḷshí Budrukh मुळशी बुदरूख, *Moolsee*, at the junction of the Nilá and Muḷá, Pauḍh-Khoré, Máwaḷ; Market on Sundays.—pop. 305. 18 31 73 34½

Muḷshí Khurd मुळशी खुर्द, Pauḍh-Khoré, Máwaḷ. 228. 18 30 73 33

Muṅḍhárvé मुंढार्वे, *Moondharweh*, on the Iṅdráyení, Náṇé-Máwaḷ, Máwaḷ, ... 18 45½ 73 30

Muṅḍhavé मुंढवे, *Moondwa*, on the Muṭá-Muḷá, t. & T. Havelí, —525. 18 32 74 0

Muṅjavḍí मुंजवडी, *Moonzowree*, on the Kará, P. Supé, Puraṅdar; a Saranjám village; *Dekh. Sar.* App. M. 2,—208. 18 20 74 8½

Murṭí मुरटी, *Moorteh*, P. Supé, Puraṅdar; *Dekh. Sar.* App. D. p. 41, —699. 18 12½ 74 20½

Murúm मुरूम, *Moorum*, on the Nirá, Nirathaḍí, Puraṅdar.—A small temple of Viṭhobá, built by Apájí Chámbhár; Jatrá held in his honour on Phálgun Shuddh 12th; Fair for four days during the Jatrá; lapsed to Government in 1826-27.—1192. 18 4½ 74 22

Muṭá मुटा, *Moota* R. rises in Máwaḷ, receives the Musá on the right and joins the Muḷá at Puṇá. { 18 26 73 31 / 18 32 73 55½

Muṭá-Muḷá R. मुटा मुळा, formed by the junction of the Muṭá and the Muḷá at Puṇá. It passes through Bhimathaḍí and joins the Bhímá. *Thornton*, Gaz. 'Moola-Moota.' { 18 34 74 25 / 18 32 73 55

Muthaḷṇé मुथळणे, *Moolthulneh*, Votur, Shivaner. 137. 19 21 74 0

Nágápur नागापुर, on the Miná, Avsarí, Pábaḷ,—an Inam village. —295. 19 0½ 74 8½

Nágargáṅv नागरगांव, *Nagargaon*, on the Indrayeni, Naṇé-Mawaḷ, Máwaḷ; an Inám village, the Watan Japtí Nemṇuk is Rs. 1-10-10. 18 45 73 29

Nághátlí नाघातली, Aṅdar-Máwaḷ, Kheḍ, —179. 18 52 73 35

Náhví नाहवी, *Nawee*, t. & T. Iṅdápur, . —429. 18 11 74 56

Nájhré नाझरे, *Nazreh* (k), on the Kará, Karépaṭár, Puraṅdar; an I ám; Z llá Báb Nemṇuk Rs. 71-15-1.—384. 18 18 74 17

Nájhré Budrukh नाझरे बुदरूख, on the Kará, P. Supé, Puraṅdar;—

a hereditary Saránjám; the Nim Chauthái and other Bábtí Nemnuk are Rs. 20-10-0 . . . pop. 149. Lat. 18° 18′N. Long. 74° 17′E.

Naḷavaṇé नळवणे, *Nulwulun*, Belhé, Bori-peṭá, Shivaner.—413. 19 12 74 16

Náḷolí नाळोली, P. Supé, Puraṅdar,—a Saranjám village; the Tijái Amal Akár is Rs. 62-9-4. . . . . —337. 18 18½ 74 30

Nánavḍé नानवडे, Ambégáṅw, Kheḍ. . —120. 19 8 73 41

Náṅdádéví नांदादेवी, Páṭas, Bhimathaḍí, —125. 18 29 74 34

Náṅdéḍ नांदेड, *Nandehreh*, on the Muṭá, Karyát-Máwaḷ, Haveli. —793. 18 26½ 73 51

Nandewlee, v. Náṅdivlí.

Náṅdgáṅw नांदगांव, on the Muṭá, Pauḍh-Khoré, Máwaḷ. 18 38½ 73 27½

Náṅdgáṅw नांदगांव, Náné-Máwaḷ, Máwaḷ.—The Isáfat village is of Wataní service. . . . . —229. 18 39 73 27

Náṅdivlí नांदिवली, *Nandewlee*, on the Muṭá, Pauḍh-Khoré, Máwal. —179. 18 32½ 73 32

Náṅdoshí नांदोशी, *Nandoosee*, Karyát-Máwaḷ, Havelí.—312. 18 25½ 73 51

Náṅdúr नांदूर, Mahálunge, Pábal, . . . —695.

Náṅdúr नांदूर, on the Muṭá Muḷá, Saṅḍas, Bhimathaḍí.—Lapsed to Government in 1845-46, ... —292. 18 30 74 14

Naṅdur Khaṅḍármáḷ नांदुर खंडारमाळ, Karḍé, Shivaner.—918. 19 20 74 18

Náṇé नाणे, Náṇé-Máwaḷ, Máwaḷ; Market every Saturday except during the monsoons. . . . . —489. 18 46½ 73 37

Nángáṅw नानगांव, *Nandgaon*, on the Bhimá, Páṭas, Bhimathaḍí; an old temple; Jatrá held on Chaitra Shuddh 15th in honour of Rásái Deví. . . . . —276. 18 32½ 74 29½

Náṇívlí नाणिवली, on the Muṭá, Pauḍh-Khoré, Máwaḷ, 18 32½ 73 32½

Náṇolí नाणोली, Náṇé-Máwaḷ. 18 47 73 38

Náṇolí नाणोली, on the Indráyeṇí, Chákaṇ, Kheḍ.—Lapsed to Government in 1828-29. . . . . 175. 18 45½ 73 45

Nánvij नानवजि, on the Bhimá, Páṭas, Bhimathaḍí,—pop. 100.
Lat. 18° 30½′N. Long. 74° 36′E.

Náráyaṇgaḍ नारायणगड, Fort and temple, Pábaḷ, 2,888 feet above the sea; Bom. Geog. Trans. IX. pp. 344. . . 19 7 74 6

Náráyaṇgáṅw नारायणगांव, Náráyaṇgaṅw, Pábal; Market on Saturdays. . . . . —3493. 19 7 74 2½

Náráyáṇ Peṭh नारायण पेठ, Karépaṭár, Puraṅdar, at the foot of Wajragaḍ fort. 18 17 74 2½

Narhé नऱ्हे, *Nurheh*, t. & T. Havelí; an Inam.—308. 18 26½ 73 53½

Nároḍí नारोडी, Máháḷuṅgé, Pábaḷ,—1220.

Narsiṅvhpur नरसिंव्हपुर, *Nursingpoor*, t. & T. Iṅdápur; Temple of Narsiṅvha Deva at the junction of the Bhímá and Nírá, built by the Vinchurkars; Jatrá on Vaishákh Shuddh 14th and 15th in honour of the god; Fair on the Jatrá day. An Inám; the Deshmukhí is Rs. 7-10-10. . . . . —1335. 17 58 75 11½

Navalákh Umbré नवलाख उंब्रे, *Ombreh*, on the Sud, Chákaṇ, Kheḍ; Market on Tuesdays, ... —1295. 18 48 73 45

Návaḷí नावली, *Nawullee*, P. Supé, Puraṅdar.—An Inám village. —327. 18 13½ 74 16½

Nawee, v. Náhvi.

Nawullee, v. Návaḷí.

Náyagáṅv नायगांव, Karépaṭár, Puraṅdar. —525. 18 22 74 18½

Náyagáṅv नायगांव, Sáṅḍas, Bhimathaḍí. —784. 18 28 74 9

Náyagáṅv नायगांव, Náṇé-Máwaḷ, Máwaḷ. —225. 18 45½ 73 38

Náyaphaḍ नायफड, Ambégáṅv, Kheḍ. . —578. 19 3 73 44

Nazreh, v. Nájhré.

Neera, v. Neré.

Neergooreh, v. Nigurḍé.

Neitwur, v. Netwaḍ.

Nepatwaḷaṇ नेपतवळण, on the Kará, P. Supé, Purandar. 18 12 74 5

Neré नेरे, *Neera*, on the Rautwaḍá, t. & T. Havelí,—an Inám village. —436. 18 38 73 44½

Nesávé नेसावे, Náṇé-Máwaḷ, Máwaḷ; lapsed to Government in 1846. —166. 18 47½ 73 33

Netwaḍ नेतवड, *Neitwur*, on the Pushpávati, Votúr, Bráhmaṇwáḍá-Peṭá, Shivaner. . . . . —272. 19 14 74 2

Newkhundee, v. Nivkhanḍé.

Nháváḍé न्हावडे, Aṁbégáṅv, Kheḍ.—pop. 151.
Lat. 19° 10′N. Long. 73° 40½′E.

Nháwí न्हावी, on the Nirá, Shirwaḷ, Puraṅdar,—1026. 18 9½ 74 4½

Nháwí न्हावी, on the Bhimá, Sáṅḍas, Bhimathadí,—an Isáfat village of Watani service; the Mokásá of Sar Deshmukhí, Sáhotrav, Chákar Máné and other Bábats, is Rs. 124-1-10. —415. 18 36½ 74 12½

Niboḍí निबोडी, P. Supé, Purandar; an Inám; the Nim Chauthái Bábat Nemṇuk is Rs. 44. . . . . —393.

Nigḍáḷé निगडाळे, Aṁbégáṅv, Kheḍ, . —200. 19 5 73 37½

Nigḍé नीगडे, Náṇé-Máwaḷ, Máwaḷ; acquired March 1846.—293. 18 50 73 42½

Nigḍí नीगडी, t. & T. Haveli; an Inám; the Sar Deshmukhí Nemṇuk is Rs. 23-15-9. . . . . —214. 18 39½ 73 50

Nighojé नीघोजे, *Neeghoje*, Chákaṇ, Kheḍ; a hereditary Inám,—804. 18 44 73 52½

Nigurḍé निगुर्डे, *Neergooreh*, on the Miná, Minnehér, Shivaner,—589. 19 12 73 53

Niḷshí निळशी, *Neelsee*, Andar-Máwaḷ, Kheḍ,—202. 18 54 73 33

Niḷuṅj नीळुंज, *Neelooj*, on the Kará, P. Supé, Puraṅdar,—147. 18 19 74 10½

Niṁbarwáḍí निंबरवाडी, on the Muḷá, Pauḍh-Khoré, Máwaḷ,—75. 18 31½ 73 33

Niṁdarí नीमदरी, *Nimburree*, on the Miná, Máháḷuṅgé, Haveḷi, Shivaner; Jatrá held on Chaitra Shuddh 15th in honour of Reṇuká Deví, ... —308. 19 8 73 57

Niṁbgáṅv नींबगांव, on the Bhímá, t. & T. Kheḍ,—a hereditary Inám; Mokásá is Rs. 108-6. . . . . —610. 18 48 73 59½

Niṁbgáṅv नाबगाव, on the Miná, Maháḷuṅgé, Haveli, Shivaner,—118. 19 8 73 57

Niṁbgáṅv नींबगांव, t. & T. Pábaḷ, . . —870. 18 42 74 17

Niṁbgáṅv-Kekatí नींबगांव केकती, t. & T. Iṅdápur.—Market on Saturdays;—Hamlets—Kacharwáḍí, Jadhuváchiwáḍí, Bhogáṅchiwáḍí. —2496. 18 4½ 74 58½

Nimbsákhar निंबसाखर, *Leembsakur*, on the Nírá,—t. & T. Iṅdápur; a Saranjám village,—Bájé Paṭí Nemṇuk Rs. 76-11-10 and Deshmukhí Rs. 58-5-4. . —pop. 362. Lat. 18° 0½′N. Long. 74° 53½′E.

Nimbgáṅvsáṅvá निंबगांवसांवा, on the Kukaḍé, Aḷé, Bori-peṭá, Shivaner. . . . . —477. 19 4 74 12

Nimboḍí निंबोडी, *Leemboree*, t. & T. Iṅdápur.—318. 18 9 74 45

Nimbut निंबुत, on the Nirá, Nirathaḍí, Puraṅḍar. 560. 18 6 74 18

Nimgír निमगीर, Kukaḍneher, Shivanér. —464. 19 18 73 51

Nírá R. नारी, *Neera*, ... rises—18 5 73 39
joins the Bhimá,—17 58 75 12

Nirguḍé नीरगुडे, *Neergoora*, t. & T. Iṅdápur, 987. 18 14 74 46

Nirguḍé नीरगुडे, on the Miná, Minneher, Shivaner.—An old temple of Márutí, built in the time of the Peshwas,—589. 19 11 73 53

Nirguḍí निरगुडी, *Needgowree*, on the Indráyeṇí, t. & T. Havelí; an Inám village; the Mokasa and Chákar Máné Nemṇuk is Rs. 112-8-6. . . . . —108. 18 39 73 59½

Nirguḍsar निरगुडसर, *Neergoorseer*, near the Ghoḍ, Avsarí, Pábal. —1214. 18 58½ 74 7

Nirnimbgáṅv निरनींबगांव, *Neer Neemgaon*, on the Nirá, t. & T. Indápur, ... —343. 17 55 75 1

Nirváṅgí निरवांगी, on the Nirá, t. & T. Iṅdápur,—1526. 17 59½ 74 56½

Nivkhaṅḍé नीवखंडे, *Newkhundee*, near the Muḷá, Pauḍh-Khoré, Máwaḷ. . . . . —102. 18 33 73 29

Nivé नीवे, *Neeweh*, Pauḍh-Khoré, Máwaḷ,—248. 18 29½ 73 29

Nu-. *v.* Na-.

Owrungpoor, v. Auraṅgpur. *Owsuree*, v. Avsarí.

Pábaḷ पाबळ, Aḷé, Bori-Peṭá, Shivaner. —105. 19 2 74 19

Pábaḷ पाबळ, t. & T. Pábaḷ.—Market on Fridays; *Hamilton* Gazet.—'Pawul'; *Thornton*, 'Pabul.' . . . —2863. 18 49½ 74 7

Pabeh, v. Páṁbhé.

Páchánė v. पाचाणे, on the Rautwáḍá, Pawan-Máwaḷ, Máwaḷ,—389. 18 37 73 14

Paḍasthaḷ पडस्थळ, *Purustal*, on the Bhíma, t. & T. Iṅdápur. —pop. 413. Lat. 18° 12½'N. Long. 75° 8'E.

Páḍḷí पाडळी, Aḷé, Shivaner;—Temple of Tuḷjá Deví; Jatrá held on Ashádh Vad 11th in honour of Madhusudhan; excavations in the hills, ... —345. 19 4½ 74 16½

Páḍḷí पाडळी, on the Bhimá, t. & T. Kheḍ,—318. 18 52½ 73 55

Páḍḷí पाडळि, on the Kukaḍé, Havelí, Shivaner.—143. 19 12½ 73 55

Páḍví पाडवी, *Purwee*, Páṭas, Bhimathaḍí,—825. 18 23 74 28

Páit पाईट, *Peínt*, on the Yil, t. & T. Kheḍ; an Inám village. —1047. 18 55 73 59

Paḷasdéva पळसदेव, *Pullusdew*, on the Bhimá, t. & T. Iṅdápur;—Temple of Mahádeva; Market on Mondays. 2493. 18 15 74 56½

Paḷaspur पळसपुर, *Pulluspoor*, Belhé, Shivaner.—431. 19 13 74 18

Pálé पाले, on the Pávaná, Pawan-Máwaḷ, Máwal.—146. 18 41½ 73 31½

Pále or Pala, पाले, Náṇé-Máwaḷ, Mawaḷ; an Isáfat; the Inám Tíjái Akár is Rs. 86-0-5; G. T. S. station on the peak to the north, 3486·4 feet above the sea; *Bomb. Geog. Soc.* vol. IX. p.344.—171. 18 49½ 73 35½

Paḷsé पळसे, on the Nilá, Pauḍh-Khoré, Mawaḷ.—143. 18 28½ 73 33

Pálú पालू, Wádé, Kheḍ; an Inam village—Mokásá and Zillá Báb Nemṇuk is Rs. 190-13-3 . . . . . —141. 18 54 73 44

Páṁbhé पांभे, *Pateh*, on the Bhimá, Wáḍé, Kheḍ. 19 2 73 39½

Pánawḍí पानवडा, Nirathaḍí, Puraṅdar; a Saranjám village.—366. 18 16 74 5½

Pánawlí पानवली, on the Bhimá, Sánḍas, Bhimathaḍí; lapsed to Government in 1826-27. . . . . —173. 18 39 74 20½

Paṅcháḷé पंचाळे, Aṁbégáṅv, Kheḍ. . —239. 18 8 73 46

Paṇḍaré पणदरे, *Pundara*, P. Supé, Puraṅdar.—1435. 18 8 74 32

Páṅḍé पांडे, Nirathaḍí, Puraṅdar. . . —198. 18 10 74 2

Páṅḍéshwar पांडेश्वर, on the Kará, Karépaṭár, Puraṅdar,—has an old temple of Mahádeva. . . . . .—451. 18 18½ 74 19

Páṅgḷolí पांगळोली, Náṇé-Máwaḷ, Máwaḷ; an Inám village; Inám Tijáí is Rs. 63-2-2, and Inám Paṭṭí payable every third year is Rs. 27-6-10. . . —pop. 75. Lat. 18° 47′N. Long. 73° 28½′E.

Páṅgáré पांगारे, Nirathaḍí, Puraṅdar, . —748. 18 16½ 74 7½

Páṅgrí पांग्री, on the Pushpávatí, Maḍkhoré, Shivaner. 19 18 73 58

Páṅgrí पांग्री, on the Bhimá, t. & T. Kheḍ.—An Inám village,—267. 18 53 73 54

Panowlee, v. Punawli.

Paráḷé, पराळे, on the Bám, Wáḍé, Kheḍ. —209. 18 52 73 44½

Páravḍí, पारवडी, on the Indráyeṇí, Náṇé-Máwaḷ, Máwaḷ. 18 46½ 73 39

Páravḍí पारवडी, Karyát-Bárámati, Indápur.—702. 18 16½ 74 42½

Parbuttee, v. Parvatí.

Pardaṅvḍí परदेवडी, *Purdowndee*, on the Pawaná, Pawan-Máwaḷ, Máwaḷ. . . . . —146. 18 41½ 73 43

Párgáṅv पारगांव, Karépaṭár, Puraṅdar, —1040. 18 21½ 74 11

Párgáṅv पारगांव, *Pargaon*, on the Ghoḍ, Avsarí, Pábaḷ; lapsed to Government in 1847-48, ... —1139. 18 59 74 9

Párgáṅv पारगांव, Kheḍpaikí, Pábaḷ. . . —807. 18 59½ 74 1

Párgáṅv पारगांव, on the Kukaḍé, Aḷé, Bori-peṭá, Shivaner.—Acquired by Government in 1830. . . . . —448. 19 2½ 74 13½

Párgáṅv पारगांव, Maḍh-Khoré, Shivaner.—300. 19 19 74 14

Párgáṅv पारगांव, on the Bhimá, Páṭás, Bhimathaḍí; an old temple; Jatrá held on Chaitra Shuddh 15th in honour of Tukáí Deví.—386. 18 34½ 74 26

Pariṅché परींचे, Nirathaḍí Paraṅdar; Market on Wednesdays; a Sarañjám. . . . . —2427. 18 11½ 74 9

Pariṭwáḍí परिटवाडी, *Pureetwaree*, on the Nilá, Pauḍh-Khoré, Máwaḷ. --60. 18 31 73 34½

Pároṅḍé पारोंडे, Havelí, Shivaner; Jatrá held in Mágh in honour of Bramhanáthá Mahádeva. . . . . —791. 19 8 73 54

Parsul परसुल, *Pursool*, Wáḍé, Kheḍ. . --125. 18 58 73 40½

Parvatí परवती, *Parbuttee*, t. & T. Havelí; a temple where a Jatrá

is held on Kártika Shuddh 15th in leap years in honour of Kártika Swámí. . . . . —pop. 874. Lat. 18° 29½'N. Long. 73° 57'E.

Páshán पाषाण, on the Rámanadi, t. & T. Havelí, with an old temple; Jatrá held on Mágh Vad 14th in honour of Someshwar Mahádeva. —862. 18 32½ 73 51½

Páṭaṇ पाटण, Ambegáṅw, Kheḍ. . . . —155. 19 9 73 41

Páṭaṇ पाटण, on the north side of Isapur fort, Naṇé-Máwaḷ, Máwaḷ. —170. 18 43½ 73 33

Páṭas पाटस, Páṭas, Bhimathaḍí; Market on Monday; an Inám village, and Railway Station.—*Thornton*, Gaz. 'Patus.'—1714. 18 25½ 74 31½

Páṭeṭháṇ पाटेठाण, on the Bhímá, Sánḍas, Bhimathaḍí.—Lapsed to Government in 1847-48, ... —223. 18 37 74 16½

Páthargáṅv पाथरगांव, Náṇé-Máwaḷ, Máwaḷ.—104. 18 45 73 35

Pátsháp ur पातशापुर, on the Kará, Karyát-Bárámatí, Indápur;—Market on Thursdays. . . . . —3103. 18 8½ 74 38

Pauḍh पौढ, *Poor*, Karépaṭár, Purandar. . —208. 18 17 74 2

Pauḍ पौड, *Powur*, or *Powar*, on the Muḷá, Pauḍh-Khoré, Máwaḷ; Market on Saturdays; *Thornton*, Gaz. 'Powar.'—1239. 18 31½ 73 40

Pavaṇá River पवणा in Máwaḷ and Haveli,—rises . 18 40 73 28
joins the Muḷá. 18 34 73 54

Peḍgáṅw पेडगांव, on the Bhímá, Páṭas, Bhimathaḍí; *Grant Duff*, Vol. I. p. 255, II. 169. . . . . —151. 18 29½ 74 46

Pee- see Pi-.

Peint, v. Peṭh.

Peint, v. Páit.

Peirgaon, v. Peḍgáṅv.

Pérṇe पेरणे, *Pherneh*, on the Bhimá, Sáṅḍas, Bhimathaḍí; an Inám village; the farm of Sheri land, of Jhulburkí and other Bábats is Rs. 353-0-8. . . . . —680. 18 37 74 7½

Peṭh पेठ, *Peint*, on the Yil, t. & T. Kheḍ; a hereditary Inám,—the Warshásan Nemnuk is Rs. 15-4-0 . . —965. 18 55½ 73 59

Phákḍhé फाकढे, on the Ghoḍ, t. & T. Pábaḷ.—395. 18 57 74 16

Phaḷṇé फाळणे, *Phulneh*, near the Andar, Náṇé-Máwaḷ, Máwaḷ.—166. 18 49½ 73 40

Phaloṅdé फळोंदे, *Phulodeh*, Aṁbégáṅv, Kheḍ.—pop. 163.
Lat. 19° 6′N. Long. 73° 42′E.

Pháṅgúḷgavháṅ फांगुळगव्हाण, *Phagoolaowhie*, Kukaḍneher, Shivaner. . . . . —19 16 73 47

Pherneh, v. Perṇé.

Phulavḍé फुलवडे, *Phoolowreh*, Aṁbégáṅv, Kheḍ.—625.
19 6½ 73 49½

Phulgáṅv or Phulshahr, फुलगांव, on the Bhímá, Sánḍas Bhimathaḍí; Market on Tuesdays; *Fitzclarence*, Journal, pp. 271-72, 276, ... —504. 18 39 74 5

Phursaṅgi फुरसंगी, *Poorsingee*, t. & T. Haveli.—1490. 18 29 74 2½

Piṁpaḷé पिंपळे, Chákaṇ, Kheḍ; an Inám village; the Deshmukhi Nemṇuk is Rs. 9-6-7. . . . . —1085. 18 42 74 7½

Piṁpaḷé पिंपळे, *Peepleh*, Karépaṭár, Puraṅdar; a Saranjám village. —610. 18 18½ 74 6

Piṁpalé पिंपळे, t. & T. Pábaḷ. . . . —353. 18 45½ 74 11½

Piṁpaḷé Gurav पिंपळे गुरव, on the Pavaná, t. & T. Haveli; an Inám village; the Aṁbráí land is Rs. 31-10 6. —214. 18 36½ 73 52

Piṁpaḷgáṅv पिंपळगांव, on the Kukaḍé, Haveli, Shivanér.
19 14 73 56

Piṁpaḷgáṅv पिंपळगांव, on the Miná, Náráyaṇgáṅv, Shivanér,—731.
19 8 74 0

Piṁpaḷgáṅv पिंपळगांव, on the Bhímá, t. & T. Kheḍ,—1099.
18 44 74 1

Piṁpaḷgáṅv पिंपळगांव, on the Muṭá-Muḷá, Sáṅḍas, Bhímathaḍí; Market on Tuesdays, ... —597. 18 34 74 21

Piṁpaḷgáṅv पिंपळगांव, on the Ghoḍ, Ghoḍé, Kheḍ,—396.
19 4 73 53

Piṁpaḷgáṅv पिंपळगांव, on the Ghoḍ, Maháḷuṅgé Pábaḷ,—1093.
19 0 74 3

Piṁpaḷgáṅv पिंपळगांव, on the Indráyeṇí, Chákaṇ, Kheḍ; a hereditary Inám, the Deshmukhí Nemṇuk is Rs. 6-10-7,—149. 18 38½ 74 1

Piṁpaḷvaṅḍí पिंपळवंडी, on the Kukaḍé, Aḷé, Bori-peṭá, Shivaner; Market on Thursdays, ... 2679. 19 10 74 7

Piṁpargaṇé पिंपरगणे, Aṁbégáṅv, Kheḍ. —277. 19 11 73 40

Pimparé पिंपरे, on the Nirá, P. Shirwal, Purandar,—pop. 388.
Lat. 18° 6½′N. Long. 74° 15′E.

Pimparí Khurd पिंपरी खुर्द, on the Bám, Chákan, Khed; a hereditary Saranjám, ... —50. 18 48 73 54½

Pimparí पिंपरी, t. & T. Havelí,—an Inám village,—597. 18 34 73 51

Pimparí पिंपरी, t. & T. Pábal,—an Inám village; the Mokásá Nemnuk is Rs. 48-3-3. . . . . —118. 18 47 74 17

Pimparí पिंपरी, Andar-Máwal, Khed, . —230. 18 56 73 34½

Pimparí पिंपरी, Karépatár, Purandar; an Inám village, the Zillá Báb Nemnuk is Rs. 71-15-1, . . . —385. 18 19 74 15½

Pimparí पिंपरी, on the Bhímá, Sándas, Bhimathadí,—660.
18 36½ 74 11

Pimparí Budrukh पिंपरी बुदरुख, on the Bám, Chákan, Khed,—403.
18 48½ 73 54½

Pimparí Budrukh पिंपरी बुदरुख, on the Bhimá, t. & T. Indápur; the village is Isáfat of Wataní service, the Deshmukhi is Rs. 29-8-2.
—207. 17 57½ 75 7

Pimparíkával पिंपरी कावळ, on the Kukade, Belhé, Bori-peṭá, Shivaner, ... —109. 19 1 74 15½

Pimparípendhár पिंपरी पेंढार, Belhé, Bori-peṭá, Shivaner,—1096.
19 13 74 7

Pimparkhed पिंपर खेड, on the Miná, Bori-peṭa, Shivaner,—475.
19 0 74 12

Pimparwádí पिंपर वाडी, Minnéher, Shivaner, . —19 11½ 73 46

Pimprí Khurd पिंपरी खुर्द, *Peepree K.*, t. & T. Indápur,—116.
18 9 75 7

Pimprí पिंप्री, Ambégáv, Khed, . . . —197. 19 7 73 40

Pimprí पिंप्री, on the Kwet, Paudh-Khoré, Máwal. 213. 18 30½ 73 27½

Pingurí पिंगुरी, Nirathadí, Purandar; a Saranjám village,—370.
18 13 74 11

Pisarvé पिसर्वे, *Peesurwee*, Karépatár, Purandar,—*Dekh. Sar.* App. D. p. 39,— . . . . . —870. 18 22½ 74 15½

Pisé पिसे, *Peesa*, Karepatár, Purandar, . —269. 18 21½ 74 22

Pisoḷí पिसोळी, *Peesolee*, t. & T. Havelí,.—pop. 144.
Lat. 18° 27′N. Long. 73° 58′E.

Pisurṭí पिसुर्टी, *Peescortee*, P. Shirwaḷ, Puraṅdar,—88. 18 8½ 74 14

Piṭkéshwar पिटकेश्वर, *Peetkeshwur*, t. & T. Iṅdápur. 18 2½ 74 57½

Pokhar पोखर, Karepaṭár, Puraṅdar. . . . . —18 18½ 74 1

Pokharí पोखरी, Ambégáṅw, Kheḍ. . . —416. 19 4 73 45

Pomgáṅv पोमगांव, Pauḍh-Khoré, Máwaḷ . —300. 18 35 73 28½

Poṅdhavḍí पांधवेड, *Poondhoree* t. & T. Iṅdápur; lapsed to Government in 1836-37, ... —295. 18 14½ 74 48

Poo-, v. Pu-.

Poorsingee, v. Phursaṅgí.

Powur, v. Pauḍh.

Pownowleh, v. Punavḷé.

Pú-, v. Pá-.

Punawḷé पुनवळे, *Poonowleh*, on the Pawaná, t. & T. Havelí; *Hamilton*, Gazet. 'Panowlee;' *Jacquemont*, Journal, tom. III. p. 585.
—415. 18 38½ 73 48

Puṇá, Puṇé पुणे, *Poona*, on the Muṭá; Market every day—70674.
18 31 73 55

In Gaṇesh Peṭh; a temple at Nágjharí, and Jatrá held on Shrávaṇ Shuddh 5th, in honour of Nágobá. In Rástyáchí Peṭh, Jatrá held on Shrávaṇ Shuddh 6th, in honour of Shirálshaṭ. In Bhavání Peṭh, a temple of Bhavání; Jatra held on her account on Ashwin Shuddh 10th, Dasará day; in Budhwár, Shanwár and Maṅgaḷwár Peṭhs about 80,000 people assemble on the 10th day of the Muharram to see the Tábut processions.

In 1750 it became the Maráṭhá capital under Báḷájí Bájí Rao; in 1763 plundered and destroyed by Nizám Alí; on the 25th Oct. 1802 Jeswant Ráo Hoḷkar here defeated the combined armies of the Peshwá and Sindhia; on the Muṭá Riv. with a celebrated temple of Párvatí on the E.; 1850 feet above the sea; annual fall of rain 24 inches; mean temp. 76 F.; *Lord Valentia*, Voy. and Trav. vol. II. pp. 104-135; *Rennell*, Memoir, p. 208; *Heber*, Journal, vol II. pp. 206-13; *M. Graham*, Journal; *Moor*, Hindu Pantheon; *Grant Duff*, Vol. I. pp. 92, 119, 194, 221, 333, II., 39, 173, III., 147, 151, 207, 384, 385, 415, 485; *Hamilton*, Gazet. 'Poona;' *Thornton*, 'Poona;'

Elphinstone, Hist. pp. 617-19, 621, 624; *Orme*, Fragments, pp. 146, 197, 237; *Jacquemont*, Journal, tom. III. pp. 544-85, 608; *Balfour*, Barom. Sections of India; *Fitzclarence*, Journal, pp. 275-77, 280-83, 289-313; Bomb. Geog. Trans. Vol. XV. pp. 39, 54; XVII. 293, IX. 191, 209-12, 344.

Puná Collectorate, area 5,250 square miles, contains the following tálukas:—

Tàlukas.	*Chief Towns.*	*Distance from Puná.*
Shivner, *Sewnere.*	Junnir or Junnar.	50 miles N.
Kheḍ, *Kheir.*	Kheḍ.	24 „ N.
Pábaḷ	Pábaḷ	24 „ N.E.
Máwaḷ.	Khaḍkáḷeṅ, *Khurkaleh.*	26 „ W.
Puraṅdar.	Sáswaḍ, *Sasoor.*	18 „ S.E.
Havelí.	Puná.	18 „ S.E.
Bhímthaḍi, *Bheemthurree.*	Pímpaḷgáṅv.	28 „ E.
Iṅdápur.	Bárámatí.	53 „ S.E.

This pargaṇá with that of Supé was made over to Malají Bhoṅslé, the grand-father of Shivájí by the Nizám Sháhí Government in A. D. 1599.

Pu-. v. Pá-.

Púr पूर, *Poor*, on the Yil, t. & T. Kheḍ; an Inam village; the Nemṇukh for Deshmukhí Watan is Rs. 85-11-0.—pop. 259.

Lat. 18 50′N. Long. 74 4′E.

Púr पूर, Kukaḍneher, Shivaner; many temples built by the Peshwas; Jatrá held in the month of Mágh on account of Kukaḍéshwar.

—19 15 73 47

Púr पूर, Karépaṭár, Puraṅdar,—an old temple of Naráyaṇshwar Mahádeva built in the time of the Mughuls; Jatrá on Mágh Shuddh 15th in honour of Káḷ Bhairav Deva, and another on Mágh Vad 14th of Náráyaṇshwar Mahádeva; a Saraṅjám village; *Dekh. Sar*, App. M. p. 2. . . . . —196. 18 17½ 74 2½

Puraṅdhar पुरंधर, *Poorandhur*, a hill fort 1,700 feet above the plain, and 4,571 feet above the sea, seized by Shivájí in 1647, besieged by Dilawar Khán 1665, and surrendered by Shivájí; retaken 1670. Treaty between the E. I. Company and the Maráṭhas 1st March 1776; taken by Genl. Pritzler 1828; *Grant Duff*, Vol. I. pp. 130, 135, 205, 209, 244, 437; II. 320; III. 480; *Thornton*, Gaz. 'Poorundhur'; Bom. Geog. Trans. Vol. IX. p. 344. 18 17 74 2

Purwee, v. Páḍwí.

Pusáṇé पुसाणे, *Poosana*, on the Ravatwáḍá, Pawan-Máwaḷ, Máwaḷ. —pop. 330. Lat. 18° 37½′N. Long. 73° 40′E.

Ráhaṭṇí राहटणी, on the Pávaná, t. & T. Haveli; a hereditary Inám; Rs. 24-15-2 is the Chákar Máné Báb Nemṇuk.—272. 18 36 73 52

Ráhaṭvaḍé राहटवडे, *Rhatowreh*, Kheḍe-Báré, Haveli.—272. 18 20 73 52

Ráhuṅjé राहुंजे, Karyát-Máwáḷ, Haveli. . —298. 18 20 73 53

Ráhu राहु on the Bhimá, Sáṅḍas, Bhimathaḍi.—871. 18 34 74 19½

Rájápur राजापुर, on the Nirá, Nirathaḍi, Puraṅdar.—230. 18 9½ 74 3

Rájapurí राजपुरी, on the Iṅdráyeṇí, Náṇé-Máwaḷ, Máwaḷ.—118. 18 46 73 42

Rájpur राजपुर, *Rajpoor*, Aṁbegáṅw, Kheḍ.—307. 19 5½ 73 40½

Rájewáḍi or Rajepur राजेवाडि, Karépaṭar, Puraṅdar; *Dekh. Sar.* App. D. p. 39. . . . . —632. 18 23½ 74 13

Rájawḍi राजवाडि, t. & T. Iṅdápur. . . —110. 18 9½ 75 1½

Rájegáṅv राजेगांव, on the Bhimá, Páṭas, Bhimathaḍi.—725. 18 21 74 51

Rájmáchi, Peak in the Gháṭs, Máwaḷ, 2715·8 feet above the sea; Bom. Geog. Tr. Vol. IX. p. 344; *Grant Duff*, vol. I. p. 141. 18 50 73 27

Rájur राजुर, on the Kukaḍé, Minnéher, Shivaner. 228. 19 14 73 51½

Rájuri राजुरि, Aḷé, Borí-Peṭá, Shivanér. —2216. 19 9 74 13

Rájuri राजुरी, Karépaṭár Puraṅdar. . . —716. 18 22½ 74 20½

Rák राक, *Rank*, Karyát-Sáswaḍ, Puraṅdar; *Dekh. Sar.* App. B. p. 95. . . . . —477. 18 12 74 16½

Rákaswaḍí राकसवाडि, Náṇé-Máwaḷ, Máwaḷ . . —18 50½ 73 32½

Ráḷégaṇ राळेगण, near the Miná, Minnéher, Shivanér.—164. 19 12 73 50

Rámosis, a tribe inhabiting chiefly the outskirts of the towns and villages in the valleys of the Mán, Nirá, Bhimá, and Pera rivers. See Capt. Mackintosh's account, Bombay 1833, and Jour. Mad. Lit. Soc. Vols. I., II., III.; *Grant Duff*, Hist. Mar. Vol. I. pp. 34, 232.

Ráñjaṇgáṅw रांजणगांव, t. & T. Pábaḷ; an Inám.—pop. 1018.
Lat. 18° 45½′N. Long. 74° 18½′E.

Ráñjaṇi रांजणि, on the Miná, Náráyaṇgáṅw, Pábaḷ.—889.
19 2 74 7½

Rank, v. Rák.

Ráseṅ रासें, *Rasen*, Chákaṇ, Kheḍ; a Saraṅjám village; Deshmukhi Nemṇuk is Rs. 4-9-7. . . . . —332. 18 44 73 57

Ráwaṇgáṅw रावणगांव, Supé Paíki, Bhimathaḍi. 639. 18 21½ 74 41

Ráwḍé रावडे, *Rawureh*, on the Muḷá, Pauḍh-Khoré, Máwaḷ.—377.
18 32 73 39

Rávet रावेत, *Ryot*, on the Pawaná, t. & T. Haveli; a small temple; Jatrá on Mágh Shuddh 2nd in honour of Dharma Rájá; an Inám.
—487. 18 37 73 48½

Reḍá रेडा, *Rehra*, t. & T. Iṅdápur. . . —388. 18 1½ 74 58½

Reḍṇi रेडणि, t. & T. Iṅdápur. . . . —374. 17 59 74 58

Rehlowree, v. Reṭavḍí.

Reṭavḍí रेटवडि, *Rehtowree*, t. & T. Kheḍ; an Inám village.—706.
18 49 73 59

Rihé रिहे, Pawan-Máwaḷ, Máwaḷ. . . —1074. 18 34 73 41½

Risé रिसे, *Reesa*, P. Supé, Puraṅdar. . —304. 18 21½ 74 21½

Roḍhi रोढि, *Rotee*, Páṭas, Bhimathaḍi. . —259. 18 23½ 74 32½

Rohkal रोहकल, *Rohekal*, on the Bám, Chákaṇ, Kheḍ.—129.
18 47½ 73 55

Rohokaḍi रोहोकडि, *Rokokree*, Aḷé Bráhmaṇwáḍá Peṭá, Shivaner; a Saraṅjám village. . . . . —254. 19 18 74 3

Rooee or Rooeh, v. Rui.

Rotee, v. Roḍhí.

Roṭi रोटि, Páṭas, Bimathaḍí; a temple of Tukái Devi built by Páṭaskar Meḍhé Kuḷkarṇi; Jatrá held on her account on Ashwin Shuddh 9th. . . . . —225. 18 23 74 33

Rui रूइ, *Rooeh*, Karyát-Bárámati, Iṅdápur.—193. 18 10 74 41

Ruí रूई, *Rooee*, t. & T. Iṅdápur; Jatrá held on Kártik Shuddh 1st in honour of Bahir; a small temple in a Jungle south of the village; in 1842-43 a half of the village lapsed to Government.—612.
18 11 74 54½

Ryot, v. Rávet.

Sáburḍí साबुरडि, Wáḍé, Kheḍ; a hereditary Sarañjám; the Mokásá is Rs. 18-2-5. . . —pop. 390. Lat. 18° 56½′N. Long. 73° 49′E.

Sadápur सदापूर, *Sadapoor*, on the Iṅdráyeṇí, Náṇé-Máwaḷ, Máwaḷ. —55. 18 46½ 73 31

Saḍavḷí सडवळि, *Serowlee*, on the Pawaná, Pawan-Máwaḷ, Máwaḷ. —167. 18 41½ 73 38

Sahyádri Mountains or Western Gháṭs; *Hamilton*, Gazet. 'Syadree.'

Sái साई, Náṇé-Máwaḷ, Máwaḷ. . . . —224. 18 48½ 73 38

Sákori साकोरि, *Sankoree*, on the Kukaḍé, Belhé, Bori-Peṭá, Shivanér. . . . . —601. 19 5 74 13

Sákurḍi साकुरडि, on the Bhimá, Wáḍé, Kheḍ; an Inám village. —418. 18 58½ 73 48

Sákurḍé साकुर्डे, Karepaṭár, Purañdar; a Sarañjám village; *Dekh. Sar.* App. M. p. 2. . . . . —358. 18 16½ 74 10½

Sál साल, Máháḷuṅgé, Kheḍ; a Sarañjám; the Mokásá Akár is Rs. 97-12-5, and Zillá Báb Nemṇuk is Rs. 105-5-5.—946. 19 2 73 52½

Saloo, v. Soḷu.

Sáltar सालतर, Pauḍh-Khoré, Máwaḷ. . —96. 18 35 73 25

Sáḷumbaré साळुंबरे, on the Pawaná, t. & T. Haveli.—155. 18 40 73 45½

Sambhavé संभवे, on the Muḷá, Pauḍh-Khoré, Máwaḷ.—159. 18 32 73 34

Sáṅgnoré सांगनोरे, on the Pushpávati, Maḍh-Khoré, Shivanér,—356. 19 20 73 57

Sáṅgruṇ सांगरूण, on the Musá, Mosé-Khoré, Haveli; an Inám; the Zillá Báb Nemṇuk, Pasture and Ambrái is Rs. 286-9-1.—278. 18 24 73 44½

Sáṅgsé सांगसे, Náṇé-Máwaḷ, Máwaḷ; lapsed to Government in 1842. —279. 18 47½ 73 34

Sáṅgurḍi सांगुरडि, on the Iṅdráyeṇi, Chákaṇ, Kheḍ. 18 43 73 48½

Sáṅgwi सांगवि, Pauḍh-Khoré, Máwaḷ; an Inám. 18 32 73 30¾

Sáṇgwi सांगवि, on the Pawaná, t. & T. Haveli; an Inám.—pop. 244. Lat. 18° 34′N. Long. 73° 53½′E.

Sáṅgwi सांगवि, on the Nirá, Karyát-Bárámati, Iṅdápur.—327. 18 3 74 33

Sáṅgwi सांगवि, on the Bhimá, Sáṅḍas, Bhimathaḍi; lapsed to Government in 1820-21. . . . . —332. 18 37 74 14

Sankoree, v. Sákori.

Saṇsar सणसर, *Sunsur*, t. & T. Iṅdápur. —665. 18 6½ 74 45½

Sáṅwaḷé सांवळे, *Sawleh*, Aṅdar-Máwaḷ, Kheḍ; an Inám; the Mokásá Nemṇuk is Rs. 39-12-11. . . . . —441. 18 56 73 32

Sároḷé सारोळे, Pauḍh-khoré, Máwaḷ. . —58. 18 28½ 73 30

Saráṭi सराटि, *Suratee*, on the Nirá, t. & T. Iṅdápur.—297. 17 54½ 75 4½

Sáṣhṭé साष्टे, on the Muṭá-Muḷá, Sáṅḍas, Bhimathaḍi; an Inám village. —98. 18 32 74 7

Sáswaḍ सासवड, *Sassoor*, *Saswur*, or *Sahsoor*, on the Kará, Karyát-Sáswaḍ, Puraṅdar; with a Mansion of the Puraṅdares; two Jatrás are held—one for Bhairava Deva on Chaitra Vad 15th, and the other for Supán Deva on Vaishákh Shuddh 11th; market every Monday; *Thornton*, Gaz.—'Sassoor.' —5718. 18 20½ 74 6

Sátewáḍi सातेवाडि, Wotur, Bráhmaṇwáḍá Peṭá, Shivanér.—319. 19 23 73 58

Sáté साते, Náṇé-Máwaḷ, Máwaḷ. . . . —470. 18 44½ 73 39

Sáwaḷ सावळ, Karyát-Bárámati, Iṅdápur. —487. 18 11 74 42

Sáwardaré सावरदरे, Nirathaḍi, Puraṅdar; lapsed to Government in 1846-47. . . . . —184. 18 11 74 2

Sáwardari सावरदरि, Cháḳaṇ, Kheḍ; an Inám. 113. 18 46½ 73 50

Sáwargáṅw सावरगांव, Aḷé, Bori-Peṭá, Shivanér. 626. 19 9 74 21

Sáwargáṅw सावरगांव, Wotur, Bráhmaṇwáḍá Peṭá, Shivanér.—560. 19 24 74 15

Sáwargáṅw सावरगांव, on the Miná, Mahálunge, Shivanér.—1285. 19 8 73 58

Sáwarli सावरलि, Ambégáṅw, Kheḍ. . . —179. 19 7½ 73 41½

Sawidaṇé सविदण, t. & T. Pábaḷ; a Jahágir; the Mokásá Nemṇuk is Rs. 275-2-9. . . —pop. 889. Lat. 18° 54′N. Long. 73° 10′E.

Sawleh, v. Sáṅwaḷé.

Sáyagáṅw सायगांव, on the Bhimá, t. & T. Khed. 391. 18 56 73 52

See- see Si-.

Sehul, v. Shiḷ.

Seer, see Shir.

Serowlee, v. Sadawli.

Sewne, v. Shivṇé.

Sewner, v. Shivanér.

Sewreh, v. Sívré.

Sháhá शाहा, *Sha*, on the Bhimá, t. & T. Iṅdápur.—199. 18 7 75 9

Sháhápur शाहापुर, Pauḍh-Khoré, Máwaḷ; beside it is Korigaḍh fort. (Khuwarigaḍh). . . . . —54. 18 37 73 27

Sheḍáṇi शडाण, on the Muṭá, Pauḍh-Khoré, Máwal; an Inám village. . . . . —408. 18 33½ 73 31½

Shehreh, v. Sheré.

Sheḷgáṅw शेळगांव, t. & T. Iṅdápur; Jatrá on Kártik shuddh 15th, and the following two days. . . . —2,025. 18 6 74 54½

Shelgáṅw शेलगांव, at the junction of the Bám with the Bhimá, Chákaṇ, Khed; an Inám; Zillá Báb and Desmukhí Nemṇuk is Rs. 311-12-9. . . . . —259. 18 44 74 1

Shelú शेलु, on the Bám, Chákaṇ, Kheḍ; a Saraṅjám village.—192. 18 49 73 50½

Sheṅdurli शेंदुरलि, Wáḍé, Kheḍ. . . — 92. 19 1 73 42

Sheṅvati शेंवति, *Shewati*, Pawan-Máwaḷ Máwaḷ. 18 41 73 33

Sherda, v. Shirdhé.

Sheré शेरे, *Shehreh*, on the Muḷá, Pauḍh-Khoré, Máwaḷ.—516. 18 32 73 36

Sherolee, v. Shirolí.

Shetphaḷgaḍ शेटफळगड, *Shetphulleh*, t. & T. Iṅdápur.—443. 18 15 74 44

Shetphaḷhavelí शेटफळहवेलि, *Setphuleh*, t. & T. Iṅdápur.—710. 18 1 75 1½

Shewati, v. Sheṅvati.

Sheweh, v. Shivé.

Shiḷ शीळ, on the Aṅdar, Aṅdar Máwaḷ, Khed. 18 56 74 33

Shiláṭaṇé शिलाटणे, *Sheelatneh*, Náṇé-Máwaḷ, Máwaḷ; Eastern extremity of the Karla base line here, 2,670·8 feet above the sea; Bom. Geog. Trans. Vol. IX. p. 344.—pop. 214.
Lat. 18° 46′N. Long. 73° 33′E.

Shiḷwaṅḍi शिळवंडि, on the Muḷá, Wotur, Bráhmaṇwáḍá-Peṭá, Shivanér. . . . . —126. 19 26 73 56

Shiṅdé शिंदे, on the Miná, Minnehér, Shivanér.—113. 19 13 79 49

Shiṅdgáṅw शिंदगांव, on the Pawaná, Pawan-Máwaḷ, Máwaḷ.—80. 18 41½ 73 32

Shiṅgwé शिंगवे, *Singweh*, at the junction of the Ghoḍ and the Miná, Avasari, Pábaḷ; lapsed to Government in 1842-43.—658. 18 59½ 74 9

Shinoli शिनोलि, *Sheenoolee*, on the Ghoḍ, Ghoḍé, Kheḍ; Market on Tuesdays. . . . . —1,006. 19 4 73 51

Shirápur शिरापुर, *Seerapoor*, on the Kukaḍé, Aḷé, Bori-Peṭá, Shivanér. —424. 19 0 74 17

Shirápur शिरापुर, on the Bhimá, Páṭas, Bhimathaḍi.—374. 18 27 74 47

Shirawli शिरवलि, *Sheeroolee*, on the Muṭá, Pauḍh-Khoré, Máwaḷ. —348. 18 34½ 73 29

Shirawṭé शिरवते, Náṇé-Máwaḷ, Máwaḷ. . —193. 18 37½ 73 32

Shirdhé शिरधे, Náṇé-Máwaḷ, Máwaḷ. . —100. 18 50½ 73 32

Shiré शिरे, *Seereh*, on the Iṅdráyeṇi, Chákaṇ, Kheḍ; lapsed to Government in 1828-29. . . . . —216. 18 48 73 41

Shirgáṅw शिरगांव, *Sheergaon*, on the Niḷá, Pauḍh-Khoré, Máwaḷ. —105. 18 29 73 30½

Shirgáṅw शिरगांव, on the Bhimá, Wáḍé. Khed.—37. 19 2 73 39½

Shiroli Budrukh शिरोली बुदरूख, *Sheerolee*, on the Kukaḍé, Haveli, Shivanér. . . . . —601. 19 12 73 59

Shiroli Khurd शिरोली खुर्द, Haveli, Shivanér.—330. 19 12 73 58

Shiroli शिरोलि, Kudaḍnehér, Shivanér. . —52. 19 14 73 48

Shiroli शिरोलि, *Sheerolee*, Aḷé, Bori-Peṭá, Shivanér.—656. 19 6 74 11

Shiroli शिरोलि, *Sherolee*, on the Bhimá, Chákaṇ, Kheḍ.—pop. 328.
Lat. 18° 50′N. Long. 73° 56½′E.

Shirsawḍi शिरसवाडि, *Seersowree*, Sáṅḍas, Bhimathaḍí.—230.
18 34 74 9

Shirṣhṇé शिरष्णे, *Seerushtna*, P. Supé, Puraṅdar; a Saraṅjám village; the Akár of the Mokásá on account of half of Nim Chauthái and other Bábtis is Rs. 110-9-7. . . . . —372. 18 5 74 29½

Shirsuphaḷ शिरसुफळ, P. Supé Paikí, Bhimathaḍi ; an old temple of Sirsái Devi; Jatrá held in her honour on Vaishákh Shuddh 4th. —919. 18 19 74 38

Shitéwáḍi शितेवाडि, *Chitewarree*, Maḍh-Khoré, Shivanér.—249.
19 18 73 54

Shitéwáḍi शितेवाडि, Wotur, Brámhmaṇwáḍá-Peṭá, Shivanér.
19 20 74 3

Shivagaṅgá R. . . . . rises 18 20 73 48
joins the Nirá. 18 10 73 59

Shivanér, Fort, *Shivner*, beside Junnir (q. v.) ; built by Maliku't Tujjar in 1436 ; *Grant Duff*, Vol. I. pp. 92, 122, 244, 267.
19 12 73 55

Shivé शिवे, *Sheweh*, on the Bám, Wáḍé, Kheḍ; lapsed to Government in 1837-38. . . . . —499. 18 50 73 44½

Shivlí शिवलि, on the Miná, Minnehér, Shivanér.—141.
19 12½ 73 47

Shivlí शिवलि, Pawan-Máwaḷ, Máwaḷ. . —271. 18 41 73 33

Shivṇé शिवणे, on the Pawaná, Pawan-Máwaḷ, Máwaḷ; Market on Tuesdays; *Thornton*, 'Sewna.' . . . —595. 18 41 73 38½

Sikrápur सिक्रापुर, *Seekrapoor*, on the Yil, t. & T. Pábaḷ.—1,500
18 41½ 74 11½

Siḷeshwar सिळेश्वर, on the Muḷá, Pauḍh-Khoré, Máwaḷ.—84.
18 32½ 73 36½

Siṅdé सिंदे, Chákaṇ, Kheḍ. . . . . —201. 18 47½ 73 48½

Siṅdavṇé सिंदवणे, *Seendowneh*, Sáṅḍas, Bhimathaḍí.—411.
18 26½ 74 12

Siṅdhégavháṇ सिंधेगव्हाण, on the Bhimá, t. & T. Khed.—262.
18 42½ 74 4

Siṅgápur सिंगापुर, P. Supé, Puraṅdar; Isáfat village of Watani Service. . . . . —pop. 245. Lat. 18° 23′N. Long. 74° 10′E.

Singweh, v. Shiṅgvé.

Siṅhgaḍ सिन्हगड, or Konḍané कोंडने, a fort 4,322 feet above the sea; obtained by Shiváji, 1647; surrendered to Jaysingh, 1665; retaken by surprisal by Thanaji Malusre, 1670; reduced by Auraṅgzeb, 1701; recaptured by the Maráṭhás, 1706; and surrendered to the British in 1817, but restored and again taken by General Pritzler in 1818. *Dekh. Sar.* App. B. p. 97, 98; *Hamilton*, Gazet. 'Singhur'; *Thornton*, 'Singurh'; *Grant Duff*, Vol. I. pp. 62, 73, 109, 117, 130, 134, 209, 241-42, 399, 408, Vol. III. p. 480; *Elphinstone*, History, p. 624; *Bomb. Geog. Trans.* vol. IX. p. 344. . . . . 18 22 73 49

Sirsoḍi सिरसोडि, *Seersowree*, on the Bhimá, t. & T. Iṅdápur. --214. 18 10½ 75 5

Sivṇé सिवणे, on the Muṭá, Karyát-Máwaḷ, Havelí.—340. 18 27½ 73 50

Sivré सिवरे, on the Shivagaṅgá, Kheḍ-Báré, Havelí; lapsed to Government in 1826-27. . . . . —319. 18 18½ 73 55

Sivri सिवरि, P. Supé, Puraṅdar; an old temple of Emá Devi; Jatrá held in her honour on Chaitra Vad 8th; it is a Saraṅjám; *Dekh. Sar.* App. M. p. 2. . . . . —731. 18 17½ 74 8½

Soḷu सोळू, *Saloo*, Chákaṇ, Kheḍ. . . —469. 18 40 74 1

Somatwáḍi सोमतवाडि, at the foot of Shivanér fort, Havelí, Shivanér. 19 11½ 73 55

Somawḍi सोमवडि, *Somowuree*, Náṇé-Máwaḷ, Máwaḷ. 18 50 73 33

Somurḍí सोमुर्डि, Karépaṭár, Puraṅdar; a Saraṅjám.—136. 18 19 74 0

Sonápur सोनापुर, on the Musá, Mosé-khoré, Haveli; Market on Wednesdays. . . . . —352. 18 23½ 73 44

Sonaree, v. Sonori.

Sonawḍi सोनवडि, P. Supé, Puraṅdar. . --246. 18 15½ 74 35

Sonawḍi सोनवडि, on the Bhimá, Páṭas, Bhimathaḍi; a Jahágir village. —pop. 141. Lat. 18° 29′N. Long. 74° 37½′E.

Sonáwḷé सोनावळे, on the Miná, Minnehér, Shivanér.—183. 19 12 73 48

Sonagáṅw सोनगांव, on the Nirá, Karyát-Bárámati, Iṅdápur; an old temple of Sonéshwar Mahádeva at the junction of the rivers Nirá and Kará; Jatrá held in Shráwaṇ. . —903. 18 4½ 74 44

Sonooree, v. Sonawḍi.

Sonori सोनोरि, Karépaṭár, Puraṅdar; on the north of it is the ruins of Malhárgaḍa fort belonging to the Pánsis; an Inám; Mokásá Nemṇuk is Rs. 165-15-9. . . . . —573. 18 23½ 74 7½

Soorkoondee, v. Surkuṅḍí.

Sud R. in Kheḍ—rises in Umbra Hill 18 49 73 44
joins the Iṅdráyeṇi. 18 44½ 73 50

Sudawḍi सुदवडि, *Soodowra*, on the Sud, Chákaṇ, Khed; an Inám. —103. 18 46 73 48½

Suduṁbré सुदुंब्रे, *Sood Ombreh*, on the Sud, Chákaṇ, Kheḍ.—395. 18 46 73 48½

Sugáṅw सुगांव, *Sohogaon*, on the Bhimá, t. & T. Iṅdápur.—369. 18 9 75 9

Sukáḷveḍhé सुकाळवेढे, Minnehér, Shivanér.—225. 19 9½ 73 47

Sultánpur सुलतानपुर, on the Kukaḍé, Aḷé, Bori-Peṭá, Shivanér. —129. 19 6 74 10

Supé सुपे, Wáḍé, Kheḍ; a Saraṅjám; the Mokásá Nemṇuk is Rs. 31-14-4. . . . . —133. 18 55½ 73 42

Supé सुपे, P. Supé, Bhímathadi; a Mosque of Shámansur Pira; Hurus held in his honour on Phálgun Vad 15th; market on Wednesday; a Saraṅjám; *Thornton*, Gazet. 'Soopeh.'—3,512. 18 19½ 74 26½

Supé Khurd सुपे खुर्द, *Soopen* (*K*), P. Supé, Puraṅdar; an Inám. —415. 18 19 74 5

Supédhar सुपेधर, *Soopedhur*, on the Ghoḍ, Ghoḍé, Kheḍ. —110. 19 5 73 49

Suráḷé सुराळे, *Sooraleh*, on the Miná, Minnehér, Shivanér. —79. 19 12 73 51

Suratee, v. Saráṭi.

Surkuṅḍi सुरकुंडि, on the Bhimá, Wáḍé, Kheḍ; an Inám.—pop. 130. Lat. 19° 0′N. Long. 73° 47′E.

Sus सुस, Karyát-Máwaḷ, Haveli; an hereditary Inám.—592 18 33 73 48½

Tájé ताजे, Náṇé-Máwaḷ, Máwaḷ. . . . —209. 18 44½ 73 34

Tákḷi टाकळि on the Bhimá, t. & T. Iṅdápur; an Isáfat village; it is Watan on account of service; Bájé Paṭi Nemṇuk is Rs. 40, and Deshmukhi Rs. 29-2-3. . . . . —374. 18 12½ 75 11

Takráwáḍi तक्रावाडि, t. & T. Iṅdápur. . —121. 18 17 74 50

Tákvé Khurd टाकवे खुर्द, *Tankweh* K., Náṇé-Máwaḷ, Máwaḷ. —307. 18 46½ 73 34

Tákvé Budrukh टाकवे बुद्रूख, Náṇé-Máwaḷ, Máwaḷ; Market on Mondays except during the monsoons. —319. 18 48 73 39½

Taḷavḍé तळवडे, *Tullowda*, t. & T. Haveli; a Sarañjám. —214. 18 42 73 51

Taḷavḍé तळवडे, *Tulowreh*, Wáḍé, Kheḍ; lapsed to Government in 1837-38. . . . . —103. 18 54 73 47½

Taḷégáṅw तळेगांव, Chákaṇ, Kheḍ; an Inám village; destroyed by Náná Phaḍnavis, Jan. 1779; *Grant Duff*, Vol. II. p. 368-70; *Jacquemont*, Journal, tom. III. p. 585; *Lord Valentia*, Travels, Vol. II. pp. 101, 146; *Fitzclarence*, Journal, p. 276; *Hamilton*, Gaz. 'Tulgong.' . . . . . —4,441. 18 43 73 44

Talégáṅw तलेगांव, on the Yil, t. & T. Pábaḷ; Market on Mondays; *Thornton*, Gaz. 'Tulehgaon.' . . . —4,342. 18 40½ 74 12

Taḷéghar तळेघर, Aṁbégáṅw, Kheḍ. . —189. 19 5 73 42

Taḷérán तळेरान, Maḍh-Khoré, Shivanér. —460. 19 19 73 51½

Táṁbé तांबे, *Tamba*, Minnehér, Shivanér. —469. 19 10½ 73 50

Támhéṇi Budrukh ताम्हेणि बुद्रूख, Pauḍh-Khoré, Máwaḷ.—406. 18 27 73 29

Támhéṇi Khurd ताम्हेणि खुर्द, Pauḍh-Khoré, Máwaḷ. 18 27½ 73 29

Táṅduḷwáḍi तांदुळवाडि, Karyát-Bárámati, Iṅdápur.—452. 18 12 74 39

Tanklee on the Bhimá, v. Dháklibhimá. *Tankweh*, v. Tákvé.

Taṇu on the Bhimá टणु, *Tunnoo*, t. & T. Iṅdápur ; an Inám ; Deshmukhi is Rs.30-3-8 —pop. 142. Lat. 17° 58½′N. Long. 75° 9½′E.

Taraḍé तर्डे, *Turude*, Sáṅḍas, Bhimathaḍi. —215. 18 26½ 74 9½

Taraḍgáṅw तरडगांव, *Turtgaon*, on the Bhimá, t. & T. Iṅdápur. 129. 18 4 75 11

Tarḍoli तरडोलि, *Tudoolee*, on the Kará, P. Supé, Puraṅdar.—281. 18 15½ 74 24

Táthavḍé ताथवडे, *Tatowdeh*, on the Pawaná, t. & T. Haveli ; an Inám. . . . . —365. 18 37½ 73 49½

Táwsi तावसि, on the Nirá, t. & T. Iṅdápur.—216. 18 4½ 74 44

Teekowree, v. Tékavḍi. *Teepurwarree*, v. Tiphaṇwáḍi.

Teergaon, v. Thergáṅw. *Tehroongun*, v. Teruṅgaṇ.

Teilbehla, v. Telbaila.

Tejéwáḍi तजवाडि, on the Kukaḍé, Haveli, Shivanér.—382. 19 12 74 0

Tejúr तेजूर, on the Kukaḍé, Kukaḍnehér, Shivanér.—230. 19 14 73 51

Tekavḍi टेकवाडि, *Tokowree*, Wáḍé, Kheḍ. —175. 18 54 73 42

Tekavḍi टेकवाडि, *Teekowree*, Karépaṭár, Puraṅdar.—399. 18 24 74 15½

Telbaila तेलबैला, *Teilbehla*, Pauḍh-Khoré, Máwaḷ.—116. 18 34 73 22

Teruṅgaṇ तेरूंगण, *Tehroongun*, Aṁbégáṅw, Kheḍ.—19 6 73 39

Thergáṅw थेरगांव, *Teergaon*, t. & T. Haveli.—141. 18 36½ 73 50

Theúr थेऊर, *Thewoor*, on the Muṭá-Muḷá, Sáṅḍas, Bhimathadí ; an Inám ; the Sheri land and Nemṇuk of Chichphaḷ is Rs. 26-8-0. —365. 18 32 74 6

Thooganv, v. Thugáṅw.

Thoráṇ थोराण, Náṇé-Máwaḷ, Máwaḷ. . . —130. 18 51 73 31½

Thoráṅḍaḷé थोरांदळे, *Torunduleh*, Avsari, Pábaḷ.—208. 19 2 74 6

Thugáṅw थुगांव, *Thooganv*, on the Yil, t. & T. Kheḍ.—154. 18 57 73 57

Thugáṅw थुगांव, on the Pawaná, Pawan-Máwaḷ, Máwaḷ.—pop. 209.
Lat. 18° 42′N. Long. 73° 37′E.

Tiphaṇwáḍi तिफणवाडि, *Teepurwaree*, Wáḍé, Kheḍ. 18 59 73 47½

Tirpáḍ तिरपाड, *Tripad*, Ambégáṅw, Kheḍ.—178. 19 10 73 42

Tiskari तिस्करि, Pauḍh-Khoré, Máwaḷ. 18 35 73 26½

Tisté तिस्ते, Pauḍh-Khoré, Máwaḷ. 18 34 73 28½

Tokawḍé टोकवडे, Wáḍé, Kheḍ. . . . —168. 19 3 73 40½

Tokowree, v. Tékawḍi.

Toṅdalé तोंदले, on the Nirá, Nirathaḍi, Puraṅdar.—257.
18 8½ 74 7½

Toolapoor, v. Tuḷápur.

Toongarlee, v. Tuṅgárli.

Torṇé Budrukh तोरणे बुदरूख, Wáḍé, Kheḍ; an Inám.—147.
18 53 73 44½

Torṇé Khurd तोरणे खुर्द, on the Bám, Wáḍé, Kheḍ.—124.
18 57 73 36

Torṇé तोरणे, Náṇé-Máwaḷ, Máwaḷ. . . —225. 18 49¼ 73 31

Torunduleh, v. Thoráṅdaḷé.

Tripad, v. Tirpáḍ.

Tudoolee, v. Tarḍoli.

Tuḷápur तुळापुर, on the Bhimá, Sáṅḍas, Bhimathaḍi; an Inám.
—356. 18 39½ 74 3½

Tull-, see Tal-.

Tuṅgárli तुंगारलि, *Toongarlee*, Náṇé-Máwaḷ, Máwaḷ.—143.
18 45½ 73 28

Tunnoo, v. Taṇú on the Bhimá.

Turtgaon, v. Taraḍgáṅw.

Turude, v. Taraḍé.

Uchhchiḷ उच्छीळ, *Ooscheal*, Minnehér, Shivanér.—186.
19 13 73 47

Udápur उदापुर, *Oodapoor*, on the Pushpávati, Wotur, Shivanér.
—742. 19 17 74 2

Uddhaṭ उद्धट, *Oodhat*, near the Nirá, t. & T. Iṅdápur.—295.
18 3½ 74 46

Uḍhéwáḍi उढेवाडि, on Rajmachi hill, Náṇé-Máwaḷ, Máwaḷ.
18 27½ 73 49½

Uheera, v. Ahiré.

Uksaee, v. Aṅksai.

Uksáṇ उकसाण, *Ooksan*, Uksáṇ, Máwaḷ; an Inám; the Mokásá Nemṇuk is Rs. 22-14-5, and the "Agrahár," which is continued to Bráhmaṇs, is Rs. 148-5-3.—pop. 420.
Lat. 18° 49½′N. Long. 73° 34′E.

Uṁbaré उंबरे, Náṇé-Máwaḷ, Máwaḷ. . —103. 18 49½ 73 44

Umbhoo, v. Aṁbhu.

Uṁbraj उंब्रज, *Oombrooj*, on the Pushpávati, Belhé, Shivanér; temple of Maháláksh mi, built by the Peshwás.—994. 19 12 74 4

Uṁbré उंब्रे, near the Shivagaṅgá, Kheḍ-Báré, Havelí.—313.
18 14 73 57½

Uṅḍari उंडरि, *Oondree*, t. & T. Havelí. . —474. 18 27 73 58½

Uṅḍawḍi उंडवडि, *Oondooree*, on the Muṭá-Muḷá, Sáṅḍas, Bhimathaḍi; lapsed to Government in 1831-32. . . —48. 18 32 74 19½

Uṅḍawḍi उंडवडि, Karépaṭár, Puraṅdar. —629.

Uṅḍawḍi उंडवडि, *Oondooree*, P. Supé, Puraṅdar.—231.
18 14½ 74 36

Uṅḍékhaḍak उंडेखडक, *Ondeh khurruck*, Kukaḍnehér, Shivanér.–211.
19 16 73 51

Unjunveil, v. Aṅjanvaḷé. *Unnowlee*, v. Anavaḷé.

Uraḷi उराळि, t. & T. Haveḷi; an Inám; the Chákar Máné Báb Nemṇuk is Rs. 47-15-4. . . . . —911. 18 27½ 74 1

Uraḷi उरळि, *Ooroolee*, Sáṅḍas, Bhimathaḍi; an Inám; the Mokásá and other Nemṇuks are Rs. 405-12-9; *Thornton*, Gaz. 'Ooroolee'.
—1,038. 18 29½ 74 11

Usarán उसरान्, Kukaḍnehér, Shivanér. . —69. 19 15½ 73 49

Ursé उरसे, *Oorash*, Pawan-Máwaḷ, Máwaḷ; an Inám; the Inám Japti Akár is Rs. 31-5-3. . . . . —427. 18 42 73 41½

Veehalee, v. Wyáhaḷi. *Veer*, v. Wír.

Vee- Wí.- *Veh-* We.-

Wáburḍi वाबुर्डि, *Baboordee*, on the Kará, Karyát-Sáswaḍ, Puraṅdar.
—546. 18 16 74 25½

Wachpé वचपे, *Wojpeh*, Aṁbégáṅw, Kheḍ.—192. 19 7 73 46

Waḍaj वडज, *Wuruj*, on the Miná, Haveli, Shivanér. —605.
19 9 73 55½

Waḍápuri वडापुरि, *Wurpooree*, t. & T. Iṅdápur; a Sarañjám; the Sardéshmukhi and Deshmukhi amount to Rs. 185-8-0.—pop. 509. Lat. 18° 4′N. Long. 75° 2′E.

Waḍavli वडवलि, *Wudewleh*, Náṇé-Máwaḷ, Mawaḷ; *Dekh. Sar.* App. H. pp. 3, 7, 8, 11, 12, 21. . . . . —110. 18 46½ 73 35½

Wáḍé वाडे, *Wareh*, on the Bhimá, Wáḍé, Kheḍ; an Inám; market on Saturdays. . . . . —1,610. 18 59 73 48

Wáḍébolháí वाडेबोलहाइं, Sáṅḍas, Bhimathaḍi.—889. 18 33½ 74 7½

Waḍéshwar वडेश्वर, *Wurreshwur*, Aṅdar-Máwaḷ, Kheḍ.—710. 18 51 73 36

Waḍgáṅw khurd वडगांव खुर्द, on the Muṭá, Karyát-Máwaḷ, Haveḷi; the Isáfat village is for Watani Service; the Inám Tijái and Aṁbrái land is Rs. 150-9-8. . . . . —104. 18 28 73 52

Waḍgáṅw वडगांव, *Wurgaon*, Nirathaḍi, Puraṅdar; an Inám; market on Sundays. . . . . —738. 18 7½ 74 25½

Waḍgáṅw वडगांव, on the Miná, Náráyaṇgáṅw, Shivanér.—335. 19 8 73 59

Waḍgáṅw वडगांव, on the Ghoḍ, t. & T. Pábaḷ.—495. 19 2 73 59

Waḍgáṅw वडगांव, Náṇé-Máwaḷ, Máwaḷ; with a small temple of Bhairobá; Jatrá held on his account on Chaitra Shuddh 15th; market on Tuesdays except in the monsoons; *Hamilton*, Gazet. 'Wargong'; *Grant Duff*, Vol. II. pp. 371-378; *Jacquemont*, Journal, tom. III. pp. 585-86. . . . . —865. 18 44 73 42

Waḍgáṅw वडगांव, on the Niḷá, Pauḍh-khoré, Máwaḷ.—177. 18 29 73 31½

Waḍgáṅw Bhikár वडगांव भिकार, Aḷé, Bori-Peṭá, Shivanér.—740. 19 11½ 74 9

Waḍgáṅw Báṅḍé वडगांव बांडे, on the Bhimá, Sáṅḍas, Bhimathaḍi. —165. 18 38 74 19½

Waḍgáṅw Darékar वडगांव दरेकर, Páṭas, Bhimathaḍi.—135. 18 29 74 43½

Waḍgáṅw Ghénaṅd वडगांव घेनंद, *Wurgaon*, Chákaṇ, Kheḍ; a Sarañjám; the Watan Deshmukhi Nemṇuk is Rs. 3-8-5; *Dekh. Sar.* App. A. pp. 12, 13; L. pp. 2-11, 14, 16-24. —481. 18 42½ 74 0

Waḍgáṅw Sheri वडगांव शेरि, on the Muṭá-Muḷá, t. & T. Havelí. —pop. 318. Lat. 18° 33′N. Long. 73° 59′E.

Waḍgáṅw Siṅdé वडगांव सिंद, on the Iṅdráyeṇi, t. & T. Havelí; a Sarañjám; the Mokásá Sherí and other Bábti Nemṇuks are Rs. 280-1-1. . . . . —403. 18 38 74 1½

Waḍgáṅw near Káṅḍli वडगांव नजिक कांदळि, on the Kukaḍé, Aḷé, Bori-Peṭá, Shivanér. . . . . —882. 19 8 74 8

Waḍgáṅw near Kheḍ वडगांव, Cháḳaṇ, Kheḍ; lapsed to Government in 1848-49. . . . . —332. 18 51½ 73 55½

Waḍhu Khurd वढु खुर्द, *Wurhow*, on the Bhimá, Sáṅḍas, Bhimathaḍi; an Inám. . . . . —151. 18 39 74 6

Wáḍivaḷé वाडिवळे, Náṇé-Máwaḷ, Máwaḷ. . . . 18 46 73 36

Waḍki वडकि, *Wurkee*, t. & T. Havelí; an Inám; Rs. 142-5-11 is paid to Government, Rs. 9-9-6 is paid for the Aṁbrái land, Rs. 51 for the pasture land farm and for the Sheri land according to the extent of cultivation. . . . . —846. 18 26½ 74 3½

Waḍusté वडुस्ते, *Wuroosteh*, Pauḍh-khoré, Máwaḷ.—165. 18 31 73 30½

Waḍváthar वडवाथर, *Wurwathur*, on the Muḷá, Pauḍh-khoré, Máwaḷ. —125. 18 32½ 73 32

Waḍaváw वडवाव, Mahálunge, Pábaḷ; market on Thursdays.—1,103.

Wágaj वागज, on the Nirá, Karyát-Bárámati, Iṅdápur.—573. 18 4 74 37½

Wágaj वागज, on the Kará, Karépaṭár, Puraṅdar.-741. 18 11½ 74 34½

Wágháli वाघालि, t. & T. Pábaḷ. . . —285. 18 46½ 74 16

Wághápur वाघापुर, Karépaṭár, Puraṅdar. —741. 18 24 74 11

Wágholi वाघोलि, *Wargoly*, t. & T. Havelí; *Thornton*, Gaz. 'Wagoolee'; *Fitzclarence*, Journal, pp. 271, 275.—1,759. 18 34½ 74 2½

Wághu वाघु, on the Bám, Wáḍé, Kheḍ. —244. 18 54½ 73 41

Wáhágáṅw वाहागांव, *Whangaon*, Wáḍé, Kheḍ; an Inám; the Mokásá Nemṇuk is Rs. 43-2-8. . . . . —309. 18 51½ 73 43

Wáháṇgáṅw वाहाणगांव, Aṅdar-Máwaḷ, Kheḍ.—115. 18 53 73 34

Waishákh Khedé वैशाख खेडे, on the Kukadé, Belhé, Bori-Peṭá, Shivanér. . . . . —pop.Lat. 19° 10′N. Long. 74° 6′E.
Wajreh, or *Wujreh*, v. Wojharé.
Wájavṇé वाजवणे, *Wojowneh*, Wáḍé, Kheḍ.—100. 18 57 73 45½
Wákaḍ वाकड, *Wankur*, on the Muḷá, t. & T. Havelí; an Inám; the Chákar Manyáchi Báb is Rs. 86-5-3. —567. 18 35 73 49½
Wáṅkaḷwáḍi वांकळवाडि, Khedpaiki, Pábaḷ.—165. 18 51½ 74 2½
Wákhári वाखारि, Páṭas, Bhimathaḍi; a Jahágir. 18 27 73 25½
Wáki वाकि, P. Supé, Purandar. . . . —564. 18 10 74 23
Wáki वाकि, on the Bám, Wáḍé, Kheḍ. 18 50 73 47
Wáṅki Khurd वांकि खुद, *Wankee K.*, on the Bám, Chákaṇ, Kheḍ. 18 47 73 56½
Wáṅki Budrukh वांकि बुदरूख, *Wanke* (*b*), on the Bhimá, Chákaṇ, Kheḍ; an Inám; the Deshmukhi Nemṇuk and farm of pasture is Rs. 43-7-3. . . . . —441. 18 48 73 58½
Waḷak वळक, *Wullukh*, Náṇé-Máwaḷ, Máwaḷ. . 18 46½ 73 35
Wáḷki वाळकि, on the Muṭá-Muḷá, Sáṅḍas, Bhimathaḍi; tomb of Saṅtbáwá near the junction of the Bhimá with the Muṭá-Muḷá; Jatrá held on his anniversary on Mágh Shuddh 14th.—365. 18 34½ 74 22
Wáḷaṅdh वाळंध, *Walhud*, on the Bhimá, Wáḍé, Kheḍ.—361. 19 0 73 46
Waḷaṇé वळणे, *Wulneh*, Pauḍh-khoré, Máwaḷ.—267. 18 32½ 73 33
Waḷati वळति, *Wultee*, on the Miná, Waḷati, Pábaḷ.—525. 19 1 74 8
Waḷati वळति, Sáṅḍas, Bhimathaḍi. . . —511. 18 26 74 11
Wálhé वालहे, Nirathaḍi, Purandar; a Saraṅjám; market on Thursdays. . . . . —3,050. 18 11 74 12½
Walhud, v. Wáḷaṅdh.
Wáḷuṅj वाळुंज, on the Kará, Karépaṭár, Purandar; an Inám. —196. 18 19 74 10½
Waḷawaṅḍhé वळवंढे, *Wulwandeh*, Náṇé-Máwaḷ, Máwaḷ.—206. 18 49½ 73 29

Waḷavaṅti वळवंति, *Wulwuntee*, Náṇé-Máwaḷ, Máwaḷ.—pop. 109.
Lat. 18° 49½′N. Long. 73° 33½′E.

Wánawḍi वानवाडि, t. & T. Havelí; *Dekh. Sar.* App. D. p. 38; G. T. S. Station; 1,942 feet above the sea, Bomb. Geog. Trans. Vol. IX. p. 344. . . . . —1,461. 18 29½ 73 57½

Wáṅdaré वांदरे, Wáḍé, Kheḍ. . . . — 177. 18 58½ 73 36½

Wánéwáḍi वानेवाडि, on the Miná, Minnehér, Shivanér.—86.
19 12½ 73 49

Wangaḷi वनगाळि, t. & T. Iṅdápur. . . —103. 18 8 75 2½

Wáṅgaṇi वांगणि, Gunjaṇ-Máwaḷ, Havelí. —335. 18 18½ 73 49½

Wáṅjḷé वांजळे, Wáḍé, Kheḍ. . . . . —73. 19 2 73 43

Wanjolwiheer. v. Wáṅjuḷvihiré.

Wáṅjuḷvihiré वांजुळविहिरे, *Wanjolwiheer*, near the Yil, Wáḍé, Kheḍ.
18 56 73 38

Wáṅkalwáḍi, G. T. S. Station, Kheḍpaiki, Pábaḷ, 2,847-6 feet above the sea. 18 51½ 74 2

Wankee (*b*), v. Wáki Budrukh. *Wankee K.*, v. Wáki Khurd.

Wáṅksai वांकसइ, Náṇé-Máwaḷ, Máwaḷ; an Inám; the Watan Japti Nemṇuk is Rs. 20-1-9. . . . . —193. 18 46 73 31

Wankur, v. Wákaḍ.

Wankuṭé वनकुटे, *Wunkooteh*, Belhé, Shivanér.—382. 19 20 74 11

Wanpuri वनपुरि, *Wunpooree*, Karépaṭár, Puraṅdar; an Inám; the Sheri land is held by Government, and Rs. 12-4-0 is paid on its cultivation. . . . . —398. 18 22½ 74 8

Wánré वानरे, on the Kwet, Pauḍh-khoré, Máwaḷ. 18 31½ 73 31½

Wáphgáṅw वाफगांव, on the Yil, t. & T. Kheḍ; market on Tuesdays; an Inám; the Mokásá Nemṇuk is Rs. 305-15-9; G. T. S. Station on hill on the South 2,874·6 feet above the sea; Bomb. Geog. Trans. Vol. IX. p. 344. . . . . —1702. 18 53½ 74 3

Warda G. T. S. Station N. of Junnar, 4,654·7 feet above the sea; Bomb. Geog. Trans. Vol. IX. p. 344. . . . . 19 19 73 56

Wárak वारक, on the Niḷá, Pauḍh-khoré, Máwaḷ.—221.
18 28½ 73 31

Waráḷé near Iṅduri वराळे जवळ इंदुरि, on the Iṅdráyeṇi, Chákaṇ Kheḍ. . . . . —76. 18 45 73 45½

Waráḷé near Bhámbuli वराळे, *Wurulla*, Chákaṇ, Kheḍ.—pop. 144.
Lat. 18° 47½′N. Long. 73° 51′E.

Wareh, v. Wáḍé.

Wárjé वार्जे, *Wurja*, on the Muṭá, t. & T. Haveli.—237.
18 28½ 73 52½

Warkuṭé Budrukh वरकुटे बुदरूख, *Wurkoteh*, t. & T. Iṅdápur.—554,
18 12 75 1

Warkuṭé Khurd वरकुटे खुर्द, t. & T. Iṅdápur; a Saraṅjám for life; Bájé Paṭi Nemṇuk Rs. 40-0-9, and the Deshmukhi Rs. 38-8-1.
375. 18 3½ 74 59½

Warsáwṇé वरसावणे, Minnehér, Shivanér. . —31. 19 9½ 73 50

Warsoli वरसोलि, *Wursolee*, Náṇé-Máwaḷ, Máwaḷ; *Dekh Sar.* App. D. p. 37. . . . . —154. 18 46 73 29½

Waruḍé वरूडे, *Wurroodeh*, on the Yil, Kheḍ-paiki, Pábaḷ.—653.
18 52 74 4

Waruḍé वरूडे, t. & T. Pábaḷ. . . . . —496. 18 48½ 73 14

Warwaṅḍ वरवंड, Páṭas, Bhimathaḍi; an old temple; Jatrá held on Kártik Shuddh 15th in honour of Gopináth Mahádeva; market on Tuesdays. . . . . —1,508. 18 27 74 28

Wásaré वासरे, Wáḍé, Kheḍ. . . . . —354. 18 56 73 47½

Wásoli वासोलि, Chákaṇ, Kheḍ. . . . —94. 18 47 73 49

Wásuṅdé वासुंदे, Páṭas, Bhimathaḍi. . . —470. 18 19 74 33½

Wáṭár वाटार, on the Nirá, P. Shirwaḷ, Puraṅdar; a Saraṅjám; the Mokásá Akár is Rs. 153-7-6, and the Nemṇuk of sundry Bábs Rs. 12-6-2. . . . . —138. 18 10½ 74 5½

Wáṭkhaḷé वाटखळे, Maḍh-khoré, Shivanér. —192. 19 18 73 55

Wáṭḷuṅj वाटळुंज, on the Bhimá, Páṭas, Bhimathaḍi.—109.
18 24½ 74 50

Wáuṅḍ वाउंड, *Wound*, Náṇé-Máwaḷ, Máwaḷ.—320. 18 49 73 38

Vehérgáṅw वेहेरगांव, at the foot of Karla Hill, Náṇé-Máwaḷ, Máwaḷ.
—289. 18 47 73 31

Velhavaḷé वेल्हवळे, *Vehlowleh*, on the Bám, Wáḍé, Kheḍ.—104.
18 55 73 40

Velhavaḷi वेल्हवळि, Náṇé-Máwaḷ, Máwaḷ; an Inám; the Mokásá & zillá Báb Nemṇuk is Rs 96-13-8.—pop. 85. Lat. 18° 48′N. Long. 73° 49′E.

Welhoḷi वेल्होळि, *Wehlowlee*, Pauḍh-Khoré, Máwaḷ. 18 33 73 29

Vetáḷé वेतोळ, *Vehtaleh*, Wáḍé, Kheḍ. . —748. 18 56½ 73 51

Whangaon, v. Wáhágáṅw.

Wijavḍi विजवडि, *Beejowree*, t. & T. Iṅdápur. —254. 18 8½ 75 1

Wiṅsar विंसर, Kánad-khoré, Haveli. . . —597.

Vír वीर, *Veer*, Nirathaḍi, Puraṅdar; a small temple of Mhasobá Bahirdeva; Jatrá held in his honour for a week commencing from Mágh Shuddh 15th; market on Saturdays; the village lapsed to Government in 1826-27. . . . . —1294. 18 8½ 74 9

Virhám विरहाम, *Veeram*, Wáḍé, Kheḍ; Inám Tijái Nemṇuk is Rs. 80-9-3; the Isáfat village is of Watani Service.—257. 18 57 73 38½.

Visákhar विसाखर, *Veesakur*, Pauḍh-khoré, Máwaḷ.—177. 18 38 73 28

Woḍhu Budrukh वोढु बुद्रूख, *Wurhow* (*b*), on the Bhimá, t. & T. Pábaḷ; lapsed to Government in 1831-45.—695. 18 40 74 5½

Wojhar वोझर, *Wozur*, Havelí, Shivanér; an old temple of Gaṇpati; an Inám; the attached Watan of Dádji Devaráo Haṅḍé Deshmukh is Rs. 26-15-0. . . . . —662. 19 11½ 74 2

Vojharé वोझरे, *Wajreh*, *Wujreh*, on the Nirá, t. & T. Iṅdápur.—93. 17 55 75 8

Wojpeh, v. Wachapé.

Wojowṇeh, v. Wájavṇé.

Wolhavaṇ वोल्हवण, on the Iṅdráyeṇi, Náṇé-Máwaḷ, Máwaḷ; market on Sundays. . . . . —274. 18 45½ 73 29

Worpé वोर्पे, *Wurpeh*, Náṇé-Máwaḷ, Máwaḷ. . . 18 48 73 31

Wotur वोतुर, *Ootoor*, Wotur, Shivanér; an old temple of Kapardikéshwar Mahádeva built in the time of the Peshwás; Jatrá held every Monday in Shráwaṇ; market on Sundays.—2,129. 19 17 74 4

Wound, v. Wáuṅḍ.

Wozur, v. Wojhar.

Wu-, see Wa-.

Wur-, see Waḍ-.

Wurhow (*b*), v. Woḍhu Budrukh.

Wurkee, v. Waḍki.

Wurpeh, v. Warpé.

Wurulla, v. Waráḷé.

Vyáhaḷi व्याहळि, *Veehalee*, t. & T. Iṅdápur.—pop. 467.
Lat. 18° 7′N Long. 74° 56½′E.

Yarhavḍé यऱ्हवडे, t. & T. Haveli; an Inám; the Sar Deshmukhi, Sohotrá, Inám Tijái, Kharédi Gallá and other Bábs is Rs. 768-2-5. —667.

Yeergaon, v. Eḍgáṅw.

Yehlowree, v. Yelaváḍi.

Yehneeyeh (*b*,), Yeṇié Budrukh.

Yekhatpur येखतपुर, on the Kará, Kerépaṭár, Purańdar; an Inám; the Bábti Amal Nemṇuk is Rs. 86-5-4. —524. 18 19½ 74 9

Yeklaharé येकलहरे, *Yeklura*, on the Ghoḍ, Mahálunge, Pábaḷ.—229. 19 2½ 74 1½

Yeklaharé येकलहरे, on the Bhimá, Wáḍé, Kheḍ.—178. 19 1 73 43

Yeklura, v. Yeklaharé.

Yekolé येकोले, Pauḍh-khoré, Máwaḷ. . . —83. 18 33 73 25½

Yeḷsé येळसे, on the Pawaná, Pawan-Máwaḷ, Máwaḷ.—163. 18 41 73 35

Yelaváḍí येलवाडि, *Yehlowree*, on the Iṅdráyeṇi, Chákaṇ, Kheḍ; an Inám; the Nemṇuk of Phaujdári Amal is Rs. 223-7-11.—179. 18 44½ 73 49½

Yeṇié Budrukh येणिहे बुदरूख, *Yehneeyeh* (*b*), Wáḍé, Kheḍ.—272. 18 58½ 73 44

Yeṇié Khurd येणिये खुर्द, Wáḍé, Kheḍ. . —55. 18 58 73 45

Yewat येवत, Sáṅḍas, Bhimathaḍi. . . —801. 18 28½ 74 20½

Eḍgáṅw एडगांव, *Yeergaon*, on the Kukaḍé, Aḷé, Shivanér; an Inám; the Inám land attached is Rs. 30-0-0. . —487. 19 10 74 4

ART. V.—*Tides and their Action, Geologically and Geographically considered, by* WILLIAM SOWERBY, Esq., C.E., F.G.S.—*Contributed by the Author.*

Read before the Society, July 27th, 1871.

Perhaps no two sciences have made such rapid progress during the last half-century as Geology and Physical Geography; being cognate subjects they have advanced with great strides, hand in hand as it were together. And they have doubtless been much assisted by the researches and discoveries in chemistry. Still, notwithstanding the great advances which have been made, it cannot but be admitted that the little we know tends only to show how very little comparatively we do know, and how much we have yet to learn. Scientific men of all nations have vied with each other in their endeavours to simplify and explain those vitally interesting questions; and their opinions, thoughts, speculations, and writings are contained in hundreds of ponderous volumes, which yearly increase in number, value, and excellence; and they are marked with such a beautiful degree of accuracy, and such a careful system of investigation, that the facts which are now on record have tended to convert much that was formerly mere speculation almost into an exact science. These questions have a charm about them which not only excites the imagination like sublime poetry, but they also exercise the reasoning faculties quite as much as the most abstruse mathematical problem. Indeed, the higher branches of mathematics have helped materially to elucidate many of the more abstruse branches of physical geography.

It is not then to be wondered at that so many great men, like Humboldt, Lyell, Murchison, Maury, and numberless others in all countries, have occupied the whole of their long and well-spent lives in furthering the objects of those noble sciences; and the results of their patience and perseverance have been the rapid advancement of scientific and economic geology, as well as physical geography: which results are now being daily applied to the ordinary business of everyday life, and in the development of the natural resources, of all civilized countries.

The more recent application of the discoveries in astronomy to geological science, and the composition of the sun, planets, and remote stars by means of spectrum analysis are also beginning to explain many things which were formerly enveloped in mystery or obscurity.

Many of those speculations, inquiries, and investigations as to astronomy, geology, the course of the tides and currents of the sea, the winds, the effects of mountain ranges, and similar subjects, are regarded by some people of a practical turn of mind merely to be interesting as purely scientific questions, suitable enough for the private study of those who have time, but comparatively of very little practical value. And there is no doubt that when any science is applied to the purposes of everyday life, it certainly does appear to a superficial observer to claim more immediate attention from practical men than it might otherwise deserve were the investigations inapplicable to the ordinary uses of the world and the common wants of mankind.

When arguing thus, however, it must never be forgotten that, but for the deeper and more profound researches of all scientific men, the smaller facts which are, as it were, the essence of those researches, and which are recognised by all as of the greatest practical utility, would fall very far short of what they are, because the ordinary portions of the knowledge acquired, and which are in daily use, form but a very small proportion of the great and minute inquiries and acquirements of scientific men, in order to obtain even a few practical results. Carlyle says "He who wants everything must know many things, do many things, to procure even a few."

The man of science may be likened to an artist or sculptor who spends a lifetime in producing one or two masterpieces of his art, which few are able to see or appreciate, while his statuettes or sketches please or satisfy the multitude who are his daily customers.

What can be more abstruse, for example, than the speculations and inquiries of a Maury? but here we have, as the consequence of his investigations, results of the greatest magnitude and importance to navigation, all which are too well known to need recapitulation here.

But geographers have yet much to learn on questions which Maury has so ably investigated, and the object of these preliminary and introductory remarks is to point out how science is connected with the business of everyday life. They may perhaps be considered superfluous in some measure by those who are well acquainted with geological and geographical science, but it will be seen further on how essential they are in a paper of this kind, which is partly theoretical and partly practical, or rather it is an attempt to apply theoretical investigations to a practical purpose, making them more particularly applicable to this

part of India, and especially to Bombay and its adjacent seas and countries.

All great geologists and geographers have been extremely careful in advancing new theories as to the formation of the earth, and the extreme caution of one of the greatest, namely, Sir Charles Lyell, has almost become proverbial, though there is no want of boldness in his speculations or care in his inquiries, but he having had to modify some of his earlier opinions, that which he now affirms is taken with greater confidence, being the results of a more mature judgment.

There are four very marked distinctions or divisions in the theories of modern geologists. These are :—First, the length of time that the various geological formations have been said to be going on, one accepting the Mosaic account of the rapid creation of all things in a few days, though there are few who do not reject this theory, or, rather historical statement, or try to modify it, as Hugh Miller did, calling the days of creation periods. The second are those who require countless ages for the earth's creation. And there is another class who alter this second theory by arguing that at certain stated and definable periods there were sudden and startling changes by which everything was upset, and everything made to wear a new aspect. Of this latter class of theorists is Mons. Alphonse Adhemar, who some years ago published his theory of Cyclical Deluges. The author of this has been unable to procure a copy of his book, but most of his arguments have been reproduced in a small volume by Mr. William Walker, F.R.S.V., a gentleman formerly well known in Bombay. A copy of this book is now in the Society's library. The theories of M. Adhemar, and some others added by Mr. Walker, will be referred to hereafter in the course of this paper.

The other two theories are the fluvial or aqueous and the igneous, each of which has its special pleaders and supporters, giving the greater preference to the one or the other according to their bent.

The object of this paper is not to recapitulate what has been said on behalf of any one of the theories that are current, but to examine one or two prominent points in the arguments advanced, and to see how far they coincide with recorded and well-known facts.

First, as regards the theories of the sudden or gradual formation of the earth.

It is very evident from even a most cursory examination that many great changes must have taken place on the face of the globe, but

whether they have been slow and gradual, or rapid and sudden, it is extremely difficult to determine, for the evidence leans both ways. We know perfectly well with what rapidity in the present day certain insects and even animals are propagated and die off, and it is just as possible as not that at some former period of the world's history large and gigantic animals like the Ichthyosaurus and the Mastodon may have been, in a similar way, "but the creatures of an hour," though we must do violence to our notions at the present age on such matters to reconcile such a theory with the present state of things. Neither can we argue against sudden physical and geographical, as well as geological, changes on the earth; for hardly a decade passes that there is not the outburst of an earthquake or volcano to record in some part of the world, or some disastrous though partial deluge which sweeps over a whole country, destroying the inhabitants and their works. Let any one consider for a moment what would be the result of denudation if all the rivers in the world were absolutely or even comparatively straight, instead of, as they are at present, almost all invariably gently winding and circuitous streams. Their length would then be quite one-fourth of what they now measure, and in many cases even less; then the gradients of their beds would be proportionately increased, and the force of their currents would not be simply multiplied or quadrupled, but they would be increased more nearly as the squares of their gradients, if not a much higher power. So that streams which now bring down earth, sand, gravel, and stones would then transport stones, boulders, and huge detached masses of rock.

Something like what might be expected to occur may be seen at the base of the Himálayas, the Alps, and other mountain ranges where huge masses of rock, many tons in weight, are found all about, which have been detached and transported from great distances in the interior.

Upon one occasion the author of this paper dug up the undecayed and unchanged trunk of a Khyr tree of the existing species which had apparently been but very recently buried beneath a bed of limestones, boulders, and coarse detritus thirty feet below the surface. This was at the foot of the Himálaya mountains.

Again, let any one examine a tidal or even non-tidal river, and note the frequent rapid changes in its bed and course; the trunk of a tree stuck accidentally in the stream will sometimes cause the direction of the river to be entirely changed by producing either a silting up or

scour, according to circumstances. And also the throwing out of artificial works has at times a like rapid effect, of which many examples can be given. As, for example, the running out of a solid approach to the jetty at the Surat Castle has made dry land where formerly, a very few years since, there was a depth of sixteen feet of water at low tide. The throwing out of groynes opposite Madras along the shore has caused the sea frontage to silt up rapidly to a very considerable width, and thus saved the sea-walls of the fort from being undermined, and added a considerable strip of land to the shore. The closing up of Sion Causeway has resulted in the silting up of the northern portion of the harbour of Bombay, it is said, to a distance of half a mile, and the projecting walls of the Elphinstone Bunders has probably helped the operation. The construction of groynes in Hendon Bay, on the east coast of England, near Sunderland, entirely altered the action of the tide in a few months, so much so as to cause a rapid silting up on the beach, where formerly there was a constant undermining and breaking away of the high bank which faced the sea.

All these are arguments from familiar and well-known places in favour of the rapid changes that have occurred by very ordinary means through the action of the tides on the earth's surface. But many arguments can also be brought forward in favour of the gradual and slow theory of change. Take, for example, the deposits of sand and detritus along coast lines, such as on the western coast of India, reference to which was made in a paper presented by the author of this paper to the Bombay Geographical Society in February 1870 relative to the Narmadá river. In that paper it was pointed out that, owing to the action and counteraction of the sea, its retreat and the accretion of land was exceedingly slow and gradual, notwithstanding the large quantity of detritus brought down by the Narmadá and other rivers. Indeed, there is good reason for believing that such-like changes are apt to oscillate like a pendulum, that is, accretion goes on at one time, and denudation and encroachment at another; but more of this hereafter.

From what we see in the present age of the action of the elements and tides, the theory of slow and gradual change is more completely illustrated than the sudden and abrupt, though, from what has been said above about changes which are going forward under our eyes, it would not appear to be at all necessary that countless ages should have passed away in order to account for the world's formation.

Let us now refer to the Adhemar-Walker theory on this question, which argues that at certain stated and definite periods in the history of the universe, the world during the precession of the equinoxes has tilted over, and the water from the polar regions, which was at one side of the equator, has flowed over to the other side, and its suddenness has caused in this manner a succession of cyclical deluges and all the changes on the surface of the globe.

The theory is based upon the precession of the equinoxes and upon the idea that one of the poles gets for the time being a greater amount of the sun's rays than the other, and that as this goes on for a long period of time, one pole gets more frozen and heavier in specific gravity than the other, and that therefore it tilts up suddenly, and the waters rush off to the other side of the globe. It in fact resembles the see-saw motion of the boys at each end of a plank balanced midway on a log of wood : the only thing additional required to make the illustration complete would be a lot of apples or marbles rolling to one end or the other each time ; or like two buckets of water fixed at the end of a large trough, and as one bucket got frozen, or the other, and the equilibrium got disturbed, the water would rush across the trough. The theory breaks down in the very outset, for it must be recollected that the precession of the equinoxes is slow and gradual, and not sudden, and that there is no such thing in the universe as up and down, these being only relative terms. The theory is also somewhat an extension of the gulf-stream theory, or of the cold and warm water of the poles and the equator exchanging their relative positions on the globe. But Maury's investigations have proved that this is constantly going on, and a continuation of these investigations is throwing further light upon the subject. Besides, there is reason to believe that at the south pole there is a large continent, and not water.

But if we were to accept the Adhemar-Walker theory, and to allow a definitive period for each time the earth tilted over, say 10,000 years, and if we allot a separate geological formation for each time the earth has performed the operation of capsizing in the way described by M. Adhemar, we have only to multiply the 10,000 years by the number of distinct formations, and we then obtain an approximate estimate of the number of years it has taken to create the world, and this would give us for the formation of the European rocks and strata about two millions of years.

But there is another difficulty in this theory which meets us. It is this: assuming such a tilting to be not impossible, would the water which surrounds the polar regions, and which is of limited area though of considerable depth, be sufficient to overspread the whole earth with a deluge? We may assume that every particle of water neither could, nor would, leave the polar regions all at once, and thus create a vacuum; because it would need to be filled up from some other region, which is unlikely to happen, and does not accord with the theory. The area of the whole earth is 197 millions of square miles, and the polar regions only three millions of square miles, and if the water of the Arctic regions were spread over the globe they would not increase the height of the waters of the intervening space beyond an ordinary billow of the sea.

There is another well-known fact, that no movement of the ocean caused by earthquakes, cyclones, or hurricanes has ever spread across the equator to the opposite side of the globe, though they have been known to travel thousands of miles within the zone in which they were originally generated, and it is hardly likely therefore that the sea would be transported *en masse*.

There are a great many other very doubtful points in M. Adhemar's theory, which require clearing up yet before it can be accepted, and it has been referred to in this paper because the attempt to connect astronomy with geology is now attracting considerable attention amongst scientific men, and it has therefore been considered that a few words in reference to this subject would not be misplaced in discussing the question of tides and their effects, for if the theory were admissible, then the effects would be very great.

Having disposed of this part of the question for the present, let us now take a brief glance at Mr. Walker's new deductions and conclusions regarding coal formations. The author is induced to refer to this part of the subject in the present paper because, as it will be seen hereafter, it is not entirely unconnected with tides and their action, for Mr. Walker distinctly traces the connection of coal formations with cyclical tides or deluges. The question of coal formation is also a very important one in India, and every theory advanced deserves therefore the most careful investigation by those who are interested in the resources of this country.

Our knowledge of the mineral resources of India, notwithstanding that there is a Geological Survey Department, is still extremely limited.

Indeed, and in fact, our knowledge of the mineral resources of some parts of the world is little better, comparatively speaking, than if it were the planet Mars or the more distant Jupiter. This may appear to some rather a sweeping assertion. But the author of this paper can speak with some confidence on this point, having had opportunities not only of noticing the mineral prospects of this country from the plains and hills of Madrás to the outlying snowy peaks of the Himálayas, but also in South-Eastern Africa, where the diamonds are now being discovered in abundance, but where there is plenty of that much more valuable form of the diamond, namely, good workable coal, particularly in Natal and to the north of it. And the author also remembers the time when there was not a single ounce of iron made in Cleveland, where now thousands of tons are made annually, much of which is exported to India.

Mr. Walker adheres to the general belief that coal was entirely of vegetable origin; that it is in fact the remains of trees grown and then buried in the earth, and finally mineralised either by the action of heat or by some other chemical or mechanical process; but he rejects the opinion that the trees of which the coal beds are said to be composed have grown and fallen, been deposited and changed in the exact position in which they grew: for he argues, and very justly, that the action of the atmosphere and the sun would very speedily reduce them to what is familiarly known as *touchwood*. He also points out a well-known fact to coal-miners, that though many fossil plants and trunks of trees are found in the coal formations, still they are invariably like the roots, and seldom complete trees; and he might have added further that such specimens of fossil plants and trees are but a very trifling percentage of the great bulk of all coal beds except perhaps the brown coals or lignites of Austria and other places. So few are they in reality, and so small a proportion do they form of any true coal bed, that it would be just as reasonable to say that a sandstone or chalk formation was made entirely of the remains of trees or animals because there happened to be a few fossil specimens of the plants and animals which lived on the earth in those days found embedded in the rocks.

There is no doubt, however, that marine animals have had a great deal to do with the formation of some limestones, such as oolites, &c.

Mr. Walker also rejects the theory that the coal formations are the result of gradual washing down of forests into deltas of rivers, that have there undergone transformation into coal. His theory is that at

each cyclical deluge the forests on the face of the earth were swept away, and, gradually drifting together, formed a huge mass upon the ocean, and were there deposited in some hollow, and finally converted into coal. It is not necessary here to stop and calculate what would be the exact quantity of forest that would be required to make any one single known coal formation if the whole was denuded from off the earth's face at the time, and it would be difficult, according to his theory, to account for the coal formations within the tropical regions: indeed he recognises this difficulty himself, and argues that there is very little; but we know that there is some, and who can tell how much more there may be—who knows what treasures of this kind "*the dark unfathomed caves of ocean yet may bear.*"

Still more difficult would it be to account for those carboniferous and carbonaceous shales which are coal and yet not coal.

There is one argument in favour of the theory. It is this:—He assumes that the forests would collect in a mass as driftwood, and coming to some still part of the sea it would rest there, and finally subside. Now, if the various mountain ranges on the globe acted as huge groynes when the world was overflooded, they would produce by their action certain calms in mid-ocean, and it may and has been argued out most curiously that the neighbourhood of Mount Ararat would be still water if the present mountain ranges in that part of the world existed at the Deluge. This is mentioned as a curious piece of deduction, and no more.

The subject of coal formations has been dwelt upon rather longer, perhaps, than the theory deserved, but it leads up to the more important question of the possible limit of coal formations.

Having spent several years of his early professional life amongst and in connection with coal and other mines in Durham and Yorkshire, the author of this paper has some practical acquaintance with the subject of coal deposits, and it has never appeared very clear to his mind why it should be accepted as a decided theory that coal is of vegetable origin, though the remains of trees and plants have been found in coal beds, for the coal itself is mineral in appearance, and in fact, besides, there are many beds of coaly shales, also iron beds, or shales full of carbon and iron (black band as it is called), all which tend to prove the mineral rather than the vegetable origin of coal. Besides, some coals are poor in carbon, some rich; some are poor in bitumen, others rich; some are in combination with other minerals, and some

approximately pure coal or carbon. The truth is that the coal formations resemble ironstone, sandstone, limestone, clay shales, and every other mineral substance which we find in beds, and it readily combines with most of them. The natural inference therefore is that it is of similar origin to other minerals, and that coal beds have been formed just as iron, limestone, and sandstone beds have been formed, but by what special agency it is of course difficult to determine, though time and close investigation will continue to throw much light upon this abstruse and recondite question.

One idea suggests itself amongst many others of less weight—it is this, that as the known coal beds are for the most part in colder latitudes, may not the carbon-producing agency, whatever it was, have been applied to produce coal instead of vegetation?

The origin of the idea of coal being made from trees no doubt was that as vegetable productions, especially the denser kind, such as timber trees, contain a large proportion of carbon, *ergo* then coal must be of vegetable origin; but it takes five to six tons of dense timber to make one ton of charcoal, and if the relative specific gravity of charcoal and mineral coal be taken into account it would of course take a very large quantity of the former to make a ton of the latter; and besides this the vegetation of former periods appears to have been by all accounts very much like the soft, spongy vegetation in the swamps and marshy grounds of the present day, and not hard, compact timber, like teak, oak, birch, beech, &c., such as are now considered suitable for making charcoal.

The late George Stephenson used to say that "coal was bottled-up sunshine." This idea was very characteristic of the man but not very explanatory of the subject, though there is no doubt that the sun, air, and light have had, and still have at the present day, much to do with the concentration of carbon in the shape of trees, &c., which contain about 25 per cent. of it, though the soil upon which they grow does not contain a single trace thereof. There are, however, in the world at the present time many regions where what may be termed incipient coal formations exist in the shape of hydro-carbon lakes of solid bitumen. At Auvergne there are bituminous springs, and on the Caspian Sea is found inflammable gas and naphtha, and petroleum springs also exist in Western Asia, in Palestine, and in Burmah, while the well known rock-oil of America yields 100 millions of gallons yearly; and it would not be very difficult to understand how these

carbonic productions might in a former state of the globe and under favourable conditions become solid mineral coal. Formerly it was the custom of geologists to say that coal formations belonged to the "Coal period," and limit them to a particular group of rocks called the "Carboniferous." More recent researches have demonstrated that good coal may and does exist in other than what was then called the true coal series of rocks. These remarks are made not so much to introduce any new theory, but rather as a caution to those who investigate geological formations of whatever kind not to jump too rapidly at conclusions, though to the experienced practical miner such precautionary remarks will doubtless appear very superfluous; the spirit in which such inquiries should be conducted is not to find out the actual existence of coal in any particular locality—for that may end in disappointment—but to ascertain what really does exist; for the author perfectly well recollects that at the time when the Cleveland iron beds were being actually worked, smelted, and sold as pig iron, the same ores were pronounced as quite worthless for smelting purposes by scientific men, and any attempt at generalisation, or pretence to be able always to pronounce dogmatically what may or may not be found below by a mere inspection of the superficial strata, is very much akin to the mystical method of pretending to find water or mineral veins by the willow wand and the divining rod of old-fashioned miners. When the well-known Pemberton pit, near Sunderland, was being sunk, the proprietor had nearly exhausted his means, and was advised to desist. "No," he replied, "I'll sink to Hades, and if I don't find coal I'll find cinders;" and the final result of his efforts was the discovery of one of the finest coal beds in England, which stretches and is worked far away under the German Ocean, but he had well studied the overlying strata before he began, and knew perfectly well what he might expect. It was merely a question of depth and determination.

Dismissing this subject, we will now proceed to examine an equally, if not much more, important question, particularly as regards Bombay, namely, the tides and their action; and especially their effect and the application of a knowledge of tides to the western coast of India and its havens, not forgetting the two most prominent, namely, Bombay and Karáchi.

In a former paper presented to the Society in 1868 by me, the question of the action of the tides in the Gulfs of Kachh and Cambay were briefly discussed. It was then pointed out that there was a peculiar

oscillation of the tides in the Indian Ocean, which, so far as the author was aware, had never before been brought under notice or published, and a further communication on this subject was then promised. The author has had but very few opportunities since that time of making actual observations on the subject, but it has not been lost sight of in the interval. It is, however, only by extended observations and a careful study of the tide tables that further light can be thrown upon this most interesting matter.

In the paper referred to, it was pointed out that there were certain places in the Indian Ocean where there is little or no tidal rise, and these were called nodes, and certain other places where the tides are of an extraordinary and unusual height, and these were called heads, and that the distance between each of those places was about 1,800 miles, or 30 degrees of an arc of the earth's circumference. The following is a list of some of those places.

Commencing at New Zealand, there is—

Low Tide—rise S. T.	Feet.	High Tide—rise S. T.	Feet.
Hawke Bay	3	Nelson	14
Port Macquarrie	4	Broad Sand	20 to 30
South Coast, Australia	1 to 4	North Coast, Candar Harbour	37½
Bencoolen	3 to 5	Bay of Bengal	22
Maldives	3	Gulf of Kachh	16
Somauli Coast	4	Madagascar	17
Algoa Bay	4	Angra Pequena	8 to 10

The above have only been given as an example, but the list might be extended right round the globe, when the different nodes and heads would form when joined together a succession of equilateral triangles.

But the places given above must not be regarded as the exact positions of the nodes or heads of the tides, but only approximate places where the tidal rise is known.

It is perfectly well established that the moon, being the nearest celestial body to the earth of any magnitude, acts by its attractive influence in causing the tides to ebb and flow, and that the sun also has a similar influence but less, being more distant.

The means or medium by which this action is effected has not been yet defined or discovered, either by astronomers or natural philosophers, but it is called the attraction of gravitation. There is, however, little doubt but that some subtle unbroken and unknown medium connects the moon and the earth, through which they act upon each other; finer than the finest gossamer thread of the silkworm; more rare than the rarest atmosphere with which man is acquainted: through which

medium direct and actual communication takes place, not only between this planet and its satellite, but between all heavenly bodies. This is as certain as that there is a direct connection between the two ends of a telegraph wire, and this medium philosophers have long been bent upon discovering and explaining.

The ordinary action of the moon in producing tides is only partially understood, but need not be recapitulated here; but at what point or points on the globe the action of the tides begin, where they are least and where greatest, and why they are large or small at certain places, is still a most obscure and ill-explained question.

The Admiralty tide-tables give us the rise and fall of the tides in very many places on the globe, and when we know, for example, the height of the tide at some particular day and at some exact hour, we can easily determine by calculation the height and time of tide on any other day according to the moon's age, making due allowances for prevailing winds, headlands, sandbanks, and other local influences. But it has not yet been clearly, or even partially, explained why the height of the tide should be only one foot, or even less, at Cochin, and 12 to 18 feet at Bombay, gradually increasing all the way up the coast; though we can explain in some measure why it is 30 feet at Cambay, because it is at the head of a narrow diminishing channel with a bell-shaped entrance or estuary.

Wherever the sea and land meet we can obtain exact tidal observations; but in the open sea we have very few or no such records, at least so few as to be hardly worth naming.

We know very well that when the waters of the sea are driven into a narrow channel they naturally rise, but where there is a broad expanse of ocean there is less tendency to rise up to a great height.

We also know that the tide impinging upon any coast line should have a tendency to rise to a higher level merely from its impact upon the shore, but an examination of the tides does not entirely bear out this conclusion. The present theory, as laid down by Dr. Whewell and Keith-Johnston, is that the tides are propagated from the great Southern or Atlantic Ocean, and that they roll round the globe from the point where propagated.* This theory is, however, most unsatis-

* Professor Candy explained this theory very plainly by taking hold of the corner of a table-cloth and giving it a shake, but the earth is not flat like a table, but round like a globe, and there is no corner such as indicated by Professor Candy, where the moon can catch hold of the waters of the ocean and give them a shake such as the professor indicated.—W. S.

factory. And the result of an examination of the tides, as recorded in the tide tables, is that there appear to be several points or nodes at which the tides begin, or from which they are propagated, and that these points are about 30 degrees or 1,800 miles apart; and if we assume this to be the case, then it would seem that there are twelve such points in each hemisphere north and south of the equator, which would encompass the entire globe: and probably a more careful examination will show that there are even more points or nodes, probably a separate series in each zone, all acting in harmony, and doubtless dovetailing as it were into and acting upon each other.

The motion of the tides appears to be not unlike the heaving of the human breast when breathing heavily during deep sleep, or in the partial opening and closing of an umbrella, the expanding force being, however, external, and not internal, and the action of the moon and sun are not unlike the rapid passage of carriage-wheels across pools of water, only instead of dashing the water aside they draw it up, like drawing up portions of an inflated or flexible globe.

But not only are the waters of the ocean acted upon in causing an upheaval, vibration, oscillation (or by whatever other name it may be called), of the sea, but it is believed—and there is some probability for that belief—that the crust of the earth itself is also similarly acted upon, and that it breathes or heaves under the same influence, though in a lesser degree. This idea is worthy of the more careful consideration, because if it is the case, then it may tend to explain the gradual rising or depression of certain coast lines, such as that of India, and particularly of the Gulf of Kachh and Cambay, which was referred to in a former paper presented to the Society in 1868. This idea of land tides as well as sea tides is possibly not a new one, though I am unaware of its ever having been mooted or published before, and there may really be nothing whatever in it, but perhaps it may be worthy of more than a passing thought.

The theory of earth tides as well as those of the sea may appear rather novel, owing to its solidity, but perhaps the well-known experiment with a thick iron ring may be remembered. It is this: if a thick wrought-iron ring of say 6 or 12 inches diameter, and of from 1 to 2 inches in thickness, be carefully turned in the inside to an exact gauge, and if a gauge rod be put across it which fits with perfect accuracy, it is well known that the most gentle pressure with the fingers on the two sides at right angles to the gauge will compress

the ring and elongate the other diameter, so that the gauge will at once drop out, though it seems quite impossible that so slight a pressure will affect the circular form of the ring.

We know that the moon has a most direct influence upon the minds of lunatics, as can be readily seen by examining the daily records of an asylum; and it may have as direct an influence on the solid earth, if we could only trace it.

In order to determine whether there is actually an uniform oscillation within 30 degrees or 1,800 miles all round the globe, and whether it is a definite and absolute law, or merely an accidental coincidence, it would be necessary to have many more tidal observations than we have at present; but as all marine and harbour works depend for their success on the absolute accuracy of such observations, as well as on an exact estimate and acquaintance with the tidal action of the adjacent seas, it is a subject quite worthy of any reasonable amount of trouble and pains to find out all about the matter.

In an early part of the paper it was stated that the tidal action along coast lines was probably of an oscillatory or intermittent character, and that at one time for a period, short or long, the action of denudation took place on one part of the coast, and silting up in other part. Now this is apparently just what has been going on between the Gulf of Kachh to the westward and the Bay of Cambay on the eastward, as referred to in a former paper. We know by unmistakable indications that the sea has at one time overspread the Runn of Kachh for great distances, and that it is now comparatively dry and elevated. And we also know that it has run further up the Gulf of Cambay than it does at present, and that the latter is now silting, or has silted up, while the former is again being gradually submerged. This latter has been attributed to slow subsidence by earthquake influences. In addition to this, we have partial or subsidiary oscillations of the same kind going on within the same localities, a sort of wheels within wheels; for there is silting up going on in the estuaries of the Tápí and Narmadá, while there is a compensatory encroachment taking place on the coast near Dana and Oolpar. These alternate changes appear to get gradually less and less as time goes on: they are like a pendulum set in motion, which oscillates slower and slower till it stops, unless the original moving force is repeated.

It has been stated that the action of the sea cannot be too minutely studied, and all its peculiarities most carefully noted, because it is of

the greatest practical utility and advantage in carrying out marine works. Seamen know very well how much they have gained and been benefited by the researches of Maury and others. They know, for example, how their voyages have been shortened by taking advantage of the prevailing winds and currents of the sea in making those voyages; but there appears to be a yet further step possible in ocean navigation, in taking advantage of the tides in making long voyages.

The mariner avails himself of the tides when nearing land and when passing up and down rivers, but in the open sea he only thinks of well-ascertained currents and trade winds, and in what way they can help him forward; but the tides he has never been able to make much use of, because they are so imperfectly understood and appreciated.

To enter upon a closer examination of the question: we know, for example, that the tidal wave travels up the western coast of India from Ceylon to Bombay, a distance of about 800 miles, in about ten hours, which is at the rate of 80 miles per hour, but vessels floating on the surface merely come along with the wind or by means of steam in three or four days, or even more.

Both Whewell and Keith-Johnston say that in some parts of the mid-ocean the tides travel at the rate of 1,000 miles per hour. But that is doubtful, as the opinion is based upon their own theory of propagation. These great tidal waves are called waves of transmission—that is to say, the waters of the sea are merely like so many sticks or telegraph wires acted upon at one end and the motion is rapidly transmitted to the other end—consequently anything floating on the surface is only sent along to a distance of a few feet, equal to the space that is necessary to raise the head at the other end 10, 20, or 30 feet, as the case may be. But a great body of water must also travel towards the head of the tidal wave as well, in order to fill up the spaces with tidal water.

The action of these waves is similar to that of the well-known experiment of a shilling placed over a card on the tip of the finger. A smart blow at the card sends it flying; but the shilling remains in the position on the finger's point. * In mid-ocean, of course, it is only the

* This illustration of the card and shilling has been objected to because it is the heavy body which remains behind, and the light body, the card, which flies off; this is exactly so, whereas in the sea it is the heavy body, the water, which passes on, and the lighter body, the vessel, which remains stationary: the illustration is there rather inapt, though not quite inapplicable.—W. S.

force that is so transmitted, but in shoaler water the sea water passes rapidly on as well. If by any means the shilling were attached to the card, then it would fly off also. So a ship is left in nearly the original position when the wave found or passed it; but if by any means the vessel could be made to attach itself to the wave they would then travel along together. How far this can be accomplished is a question for mariners to discuss.*

The principle of transmission holds good in the open sea; but so soon as the wave approaches shoal water near the land it becomes a wave of translation, and everything on the surface of the sea is carried along with it, as in the case of the vessel going up the Gulf of Cambay, for example: it would "drift," as it is called, along the top of the tide and be borne on to its certain destruction (as many a one has been), unless well managed and skilfully navigated. It is generally in shoal water where a seaman's troubles commence and where accidents occur, and not so frequently in the open sea, as the captain of the Great Eastern observed when he was in Bombay harbour.

But at what exact depth the tidal wave ceases to be one of transmission, and becomes a wave of translation, no one has yet ascertained, for there are many contingent circumstances which affect the problem. In all probability the change begins at soundings of 50 fathoms, for at that depth the bed of the ocean is distinctly acted upon by the prevailing tides or winds, or both, as shown by model charts, and as the depth decreases nearer the shore the action increases, until in shoal water of say 10 or even 15 fathoms it is a decided wave of translation.

Tidal waves passing round an island become divided, and after travelling round the shores meet again on the other side and pass on with increased velocity, the point of meeting being disturbed by eddies; and we can thus understand that if a pier or other marine work were thrown out, or ship anchored, under the shelter of any island near to where the tide reunites, it would be in a most uncomfortable position owing to the commotion in the water; this may be illustrated by the anchorage off Gogo under the shelter of Perim, or the proposed

* Great objection has been taken to this suggestion, but every one knows the action of a deep-sea anchor in retarding a ship's progress; this is of course a reverse argument. It is also well known that a heavy log of wood floating down a rapid stream passes on more rapidly than a light boat, because the wood is more deeply immersed and the current has greater power over it than over the boat: the author had recently an excellent opportunity of verifying this fact.—W. S.

pier in Bombay harbour under the shelter of the Oyster Rocks; everything therefore depends on a very minute examination of the tides before the precise position of such a work can be determined upon.

Submarine elevations, or, more properly speaking, sandbanks, have a like effect, and more than one instance could be given where vessels have felt the sudden influence of the tide after it has passed beyond those banks and joined on the other side.

The retarding influence of islands, sandbanks, and the subsequent junction of the tides and their accelerated force, is quite well understood by mariners, though not always appreciated or guarded against, and the consequence has been the wreck of many a good ship for want of this knowledge, or probably the skilful application of it, and in no part of the world has this been more frequent than on the coasts of India, and particularly that part just outside and to the south of Bombay harbour. The author feels, however, that he is on rather delicate ground among practical mariners, not being a seaman himself, and they will readily discover how much these observations are worth.

But we will now apply a few of the conclusions and deductions from what has been above advanced to works of an engineering character, which is more the author's own speciality. The action or effect of the sea on any coast line is very much like the action of a large mob, the waves being the mob, and the "ugly rush" against the Hyde Park palings some short time ago is an apt illustration of the effect of such a mob, and the means of resisting that mob is very similar to the means which should be employed to counteract the effects of the sea striking against a coast line. A number of guns at suitable distances apart with their muzzles pointing to the mob would soon have dispersed it. And if we substitute groynes for guns, and present their heads to seaward at right angles to the direction in which the tide sets, the force of the sea will be broken, and its action entirely reversed, for accretion of land will then take place. The analogy between the sea and the mob is very perfect, because both bodies are equally incoherent—the only difference is that the sea continues and the mob generally disperses.

The determining then of the exact direction in which the tide comes is most important, and another example can be given, namely, Karáchi harbour: for if the times of the tides are given even approximately correct on the Admiralty charts, then the tide which enters

Karáchi harbour comes from a south-westerly direction, and if so, then the intended breakwater off Munora Point will have the effect of making the tide have to travel a long distance round before entering the harbour, which can hardly have a beneficial effect on the entrance. The breakwater according to this view is therefore a mistake, and a long groyne at right angles to the current from the opposite side of the channel, as proposed by Captain Taylor, was the true remedy for removing the bar and deepening the entrance. It has been argued, however, that the breakwater off Munora Point is more of the character of a training wall for the outgoing current, in which case the action would be different and it would throw the bar into deeper water.

These examples show the necessity for the most careful tidal observations, not only on the actual spot where the works are contemplated, but also for some considerable distance in the adjacent seas.

The plan sometimes adopted, as in Back Bay for example, of running out breakwaters parallel with the coast line or the set of the tide, is quite useless (unless the timber erection in Back Bay was merely intended for a gangway). Such a structure does not break the sea, but the sea breaks it, and it is therefore ineffective for purposes of reclamation; where a solid breakwater is thrown out at Plymouth, the purpose and action are quite different.

They did not use battering rams in ancient warfare, for example, for breaking down doors and walls, with the beam sideways, but endways, and presently the wall or door was demolished. This is exactly similar to the action of a groyne thrown out seaward, and of which there are plenty of examples on the English coasts, and some imperfect ones in India, as at Gogo and Madras.

The plan adopted by General Tremenheere at the Indus mouths of throwing bottles into the sea has been pointed out by Maury to be very erroneous and unreliable for ascertaining the set of the tide or even a current, as there is no saying how great a circuit the bottles may have performed before arriving at their destination. The only means of obtaining exact data is by numerous actual observations of the tidal flow, and they should be reduced to one standard of time, and then lines drawn from point to point, where the times of highwater are the same at each point, would give an exact representation of the true co-tidal lines; but to accomplish this, even with the present known tidal data, would take considerable time and labour, for the period of highwater in all tide

tables is the local time at each place. This, however, the author may possibly take in hand *con amore* one of these days if he should have leisure; for the pursuits of science have their own reward, independent of any practical value such pursuits may have.

In Dr. Whewell's work on the tides he himself distinctly states that it is most incomplete and imperfect.

In applying these principles to the harbour of Bombay, it will be readily admitted how careful the tidal observations should be before commencing any new work. If Bombay were a place of minor importance, it would be a matter of secondary consequence, but it is the only really great port in Western India, and if not deteriorated it is likely to remain so. It would be better to have it a success like Hartlepool, Sunderland, Portland, and Grimsby, than a comparative failure like Dover, Holyhead, and some other places. And in order to obtain success it is of the greatest consequence that the tidal observations should be taken most carefully, not only within the boundaries of the harbour itself, but also in the seas adjacent, and the adjacent seas should also be well studied.

The effect of a "Direction Bank," for example, in diverting, retarding, or accelerating the tides outside, must influence and act upon those within the harbour of Bombay very materially; its growth will retard the flood tide, while the ebb will bring on to it and deposit silt, and the effect produced will be modified materially by the direction from which the tide ebbs and flows.

Getting within the limits of the harbour we find it a broad expanse of water divided into two forks or branches, one running up towards Tanna by Elephanta, and the other towards Sion past Mazagon: this latter has been injudiciously closed up at its head. The harbour has a number of small rocky islets on its surface, which are visible enough, and corresponding with these islands there are a number of pools or hollows, and these pools are almost of similar shape and dimensions to the islands, but of course inverted: they are like so many countersunk cups, and are not connected with each other by channels, but there is comparatively shallow ground all round them. The Great Eastern was anchored in one of them, and the Hog Island Dock is in another. It is believed that there is no chart of the harbour of Bombay which shows correctly either the contour of its bed, or with the co-tidal lines laid down thereon. The author prepared a contour model chart some time ago which was presented to His Excellency the Governor of Bombay, Sir

Seymour FitzGerald, but there are no means of laying down co-tidal lines, nor is it believed that sufficient observations have been taken to lay them down. The old charts of the Admiralty must be nearly obsolete, for great changes have taken place in the harbour since they were made.

Notwithstanding the absence of these tidal observations and contour charts of the harbour and the adjacent seas, works of the largest magnitude have been proposed, and some very costly ones carried out, and in the absence of charts no proper calculations can be made, or conclusions arrived at, as to the effect they may have when executed on the integrity of this noble harbour.

People are apt to answer, when told that such and such a work if carried out will cause and has caused a silting up, "Oh! yes, but it can be dredged;" but dredging is an expensive operation, especially in Bombay, and at best it is but a poor expedient, so that it is better to endeavour to lay out the works in such a way as to require no dredging, and it requires but a careful study of the tides to accomplish this.

As, for example, let a solid breakwater be run across from Elphinstone Works to Cross Island, and no one can doubt but that the result would be a rapid silting up of the whole space in front of Mazagon up to Sion Creek, and any partial breakwater would of course have a like partial effect.

Another great point in connection with the tides is this. When building docks, open or locked, for example, the entrances should be in a line with the set of the tide, for if vessels have to make the entrance across the tideway, as has been proposed for some dock works in Bombay harbour, then seamen can easily comprehend how extremely difficult the passage into the entrance would be.

Reclaim all the low lands on the bunders of Bombay harbour by all means if desirable. Why not? But in doing so let it not be forgotten that all such reclamations curtail the quantity of incoming water, and in such curtailment thereof the outgoing tide is reduced in its scouring power; and it must also be remembered that there are many growing sandbanks outside, which want all the scour that can be given to them.

It would probably be much better to direct attention to the reclamation of those outlying rocks, in the direction of Colaba and beyond it, called the Prongs, and there is but very little doubt that the whole of that large space up to and beyond the new Lighthouse might be gradually reclaimed by the action of the sea alone, with the aid of

groynes suitably placed. If they could not be so, it would be contrary to what we know from experience in every other part of the world where similar works have been most successfully carried out.

Such a reclamation would not be costly, because the sea must be made to do most of the work, and groynes are not very expensive works, especially with stone on the spot: and such a reclamation would do no harm to, but would benefit, the harbour; but the action of the tides must be much more carefully studied than it has yet been before such a work could be begun.

ART. VI.—*Report on the portion of the African Coast in the Vicinity of Bunder Murayah, the chief port of the Mijjertheyn tribe of Somalis.* BY Captain S. B. MILES, Bombay Staff Corps, and Acting 2nd Assistant Political Resident, Aden. Contributed by Government.

Read before the Society, August 17th, 1871.

Bunder Murayah, in lat. 11° 43' N., the chief port of the Mijjertheyn tribe of Somâl, is situated at the foot of the range of hills bearing the same name, which rise about a mile behind the town to a height of four thousand feet. The town extends nearly half a mile along the beach, and contains upwards of two hundred houses, about a quarter of which are built of sun-dried bricks, and the remainder of matting. The permanent population of the town is only some six or seven hundred, but during the trading season, when the kafilas arrive from the interior with gums and other produce, and the Arab merchants come across from the opposite coast, this estimate must be quite doubled. The largest and most conspicuous building is the Sultan's, situate at the back of the town; it is of Hadhramaut fashion, is several stories high, and was built forty years ago: there are several others also of the same style and almost as large. There are three mosques, all whitewashed, but all in rather a dilapidated state; the town also boasts a school, attended by thirty boys, who learn to read and write Arabic. The ranges of hills, of which Jebel Murayah forms part, correspond almost exactly in their formation and composition with those in some part of the opposite coast of Arabia; they are both of the same cream-coloured limestone, with sandstone, shale, quartz, &c., and the strata of both have the same confused appearance. I noticed no metallic signs here. The low narrow maritime plain in which Murayah lies extends eastward until it meets the spur forming Ras Feeluk; to the west of the town it gradually narrows until the sea washes the cliffs, thereby rendering the road to the next village, Wurba, difficult, and practicable only at low water. The soil of the plain is principally coral, with sand and fragments of rock washed down from the hills; it is well wooded with acacias, mimosa, &c., and Shora bushes, asclepias,

and aloes abound. There is, of course, no cultivation, but quite recently a few date trees have been planted near the town, and at the neighbouring village of Gurso a few plots of jowaree have been sown during the last three years as an experiment. Water is scarce, from the difficulty of excavating wells; the only well, named Eyl Teâze, is two miles from the town, and has to supply in addition both Gurso and Gesulli, which are destitute of sweet water: the supply from this well is good but of astringent quality. To the east of the town, distant 2½ miles, is the Wady Hakén (the Rio de Santo Pedro of the Portuguese); the course of this wady is a very short one, but it is fed by many torrents, and in the floods must be a deep and powerful stream. It forms the natural pass into the interior, and I explored it for twenty miles, passing two watering-places. The opening where it makes its exit is called Kurmo, and is about three hundred yards broad; it then bifurcates, one mouth entering the sea at Murayah and the other near Gurso, where it forms a "khor" or salt creek half a mile long, but barred in the dry season by the sandy beach: in the floods it is used as a shelter by bugalows and small boats.

The chain of hills bordering the N. and N. E. coast are described as extending three days' journey into the interior, when the country slopes down southwards and eastwards until it merges into an extensive hilly plain or plateau well, wooded and grassy and full of large game. No corn is raised and but little eaten, the inhabitants being purely nomadic, subsisting on their flocks and herds, and moving about for the convenience of pasturage. The country is, I imagine, but thinly peopled, and the permanent villages few, the Mijjertheyn being amongst the poorest of the Somâl, and not possessing the countless flocks of sheep owned by the Gulbêdh tribes.

The commerce of this coast is considerable, and is carried on with Moculla, Sheher, the Sowahil, Jiddah, and Bombay. The exports are frankincense, gum arabic, "mulij," indigo, and mats; for which, cloth, dates, rice, jowaree, and metals are imported in return. There are six large "buglas" belonging to these ports trading across the Indian Ocean to Bombay, besides several "sumbooks" that go to the opposite coast. The buglas rarely fill at one port, but coast along taking in cargo until full. The resources and productions of this country, especially vegetable, are much richer than might be expected from the exports, and only require to be developed for a valuable trade to spring up. Many useful gums, dyes, and oil-plants exist, of which no account whatever is

taken by the natives; the latter substance, for instance, is never expressed by them—they have, indeed, no word for it, and the very use of it is unknown, ghee being the substitute. Indigo grows wild and is sent to Moculla and Sheher, where there is a great demand for it. The mats are made almost exclusively of the "Ow" or leaf of the Doum (*Hyphæne*) and wild date palms, the latter being preferred; they are dyed of two colours only, red and black; the red dye is a mixture of aloes, "fooah," saltpetre, and camel's dung, but they are acquainted with several plants that produce a red dye. Mulij, or, as the Somâl call it Gero—the fruit of the Doum palm—is a nut with a hard and thick rind; it is cut in half, dried and strung for export. The kernel is perfectly insipid, and requires an immense deal of mastication; it has nothing to recommend it, but is much eaten by the Arabs as a restorative. Asclepias, senna, and aloe plants grow abundantly, but their medicinal and fibrous uses are unknown to the natives. No ivory, feathers, or skins are brought to these ports except by some chance party arriving from the Dulbanta country. The people possess but few cattle and still fewer horses. Animals and ghee are not exported now as formerly, all the ghee produced being consumed by themselves: even the coast people often have a difficulty in procuring it. The severe famine here in 1868 impoverished the country greatly, and the effects of it are still felt: it affected the neighbouring country of the Wursungalli also, but not to the same extent. A large portion of the inhabitants are said to have died of starvation, and thousands of animals—camels, sheep, and horses. One man was pointed out to me who had lost three hundred and eighty out of four hundred head of camels, and many were the stories of large proprietors who had been utterly ruined. Honey is as abundant here as in Arabia, but no liquor is made from it as in Abyssinia. There are two species of bee producing it—the "Neis" bee, which makes its nest in holes in the rocks; and the "Riddin," which prefers deserted ant-hills: the honey of the latter is superior. The most valuable products, however, of this country are its gums and resins. Gum arabic, tragacanth, myrrh, and many others are produced in abundance; and in no other country, except sparsely on the opposite coast of Arabia, does the olibanum or frankincense tree exist. The Somâl divide gums into two classes— sweet and bitter: to the former belong gum arabic, mastic, "luban mayeti," &c.; and to the latter myrrh, "hodthai," and others. There are at least three species of acacia producing the Sumugh or gum-arabic, and they are all very abundant: the bark is cut thrice only by the natives for the gum

to exude—if cut oftener the tree dies. I was told that the tree is cut only in this and the neighbouring province of Wursungalli; in the west the gum is allowed to exude naturally, and the natives learn when to collect it from a small insect named "Jirgah," which then begins to utter its note. The "hodthai" is a gum of peculiar quality; the tree is a thorny acacia not unlike the babool, but has a smooth bark. No leaves were on it at the time of my visit, but the berries and leaf-buds were beginning to sprout from the thorns. The gum issues in a thick milky mass or in small round lumps: when dry it becomes brittle. It is soluble in water, turning it quite milky. It is not exported, and the only use it is put to is, by men to whiten their shields, and by women to cleanse their hair. The tree producing the olibanum or frankincense, which is called by the Somâl "Beyu," grows only on the limestone ranges of this and the opposite coast. The beautiful and singular appearance of this tree, with its tapering stem and crimped foliage, attached to the smooth surface of the marble rock by its large, white, bulbous mass, and dotting the tops of the hills, where often no other verdure is to be seen, has been so often described that any further remarks are unnecessary. There are four different species of the tree, producing two distinct kinds of gum: the first and best kind, called Bedwi or Sheheri, comes from the Mohr Add, Mohr Madow, and Boido; the second kind, called Mayeti, is produced by the Yegaar. The Boido species is a taller tree than the others, and is so named from the gum running down in long tears. The Luban Bedwi is of three qualities, viz., Fusoos, Sâfee, and Mujundal; the first is the best, but for the last few years so many trees have been destroyed in this part by the drought that the little produced has been mixed with the second sort. The Mayeti is of one quality only, viz., Safai; it is very different in appearance from the Bedwi (which is in transparent drops), being of a milky white colour and in large masses or flakes. The Mohr Add and Madow trees are generally found further inland than the Yegaar, and from this I suspect the gum derives its name of Bedwi, being obtained by the coast-dwellers and merchants from the Bedouins of the interior. The Mayeti is exported chiefly to Jiddah and the Yemen ports: the Bedwi goes to Bombay for exportation to Europe. Numbers of the Somâl go across to Ḥadhramaut for the purpose of gathering the frankincense, paying the Arab tribes there for the privilege, the latter never attempting to collect it themselves. The Somalies usually settle there, selling the gum at Moculla and Sheher, until they have amassed a competency. The Arab

"Luban" is considered inferior to the African, which is termed "Asli" by the Arabs; probably the tree was imported into Arabia with the myrrh tree in very remote times. The season for gathering the gum lasts for four months—from May to September; the trees may be gashed any number of times without injury, but, unless rain falls soon after, the tree withers and dies. The gum is gathered fifteen days after the tree is cut, as it has then ceased to exude, and the bark, which heals rapidly, is again gashed. The knife with which the tree is cut is called "mingâf." The estate or plot of ground owned by each individual is called Hijjé, and is clearly defined and marked out, the trees in it being strictly respected by the other members of the tribe. The price of unsorted Luban paid to the Somâl by the Arab merchant was two pounds of jowaree for one pound of Bedwi, and one and a half pounds of jowaree for one pound of Mayeti. Besides the frankincense gum, the black and white Mohr trees yield a beautiful red dye, which is extracted from the thin papery bark. The Mayeti gum is as much used for chewing as it is for its sweet odour by the natives, and a blazing lump often serves for a light, instead of an oil-lamp. The trees, though growing wild, are carefully watched by the Somâl, and in some cases, I am told, they plant and propagate saplings in their fields; but this laudable custom, by which their wealth might be decupled, is too laborious to be universally followed.

The marriage ceremonies among these people differ considerably from those of the Arabs. The marriage portion paid to the girl's father is called "yerrud," and consists of from ten dollars to a hundred camels. It is not necessary to settle any dowry on the girl herself, and it is indeed seldom done. After betrothal the boy sometimes remains two or three years in his father-in-law's house for service, at the end of which he is sent back with presents often equal to or exceeding the "yerrud." Girls are sometimes carried off by force and married, and then, unless the parents are satisfied with a handsome present (which is usually done), war is sure to result. Boys, too, while tending flocks of cattle outside the village, are frequently carried off and held to ransom, in default of payment of which they are sometimes killed. In the horse-countries marriages of wealthy people are celebrated with more ceremony and show, all the men of the tribe present turning out on horseback and going though mock combats, &c. Here a little dancing and tomtoming, with a feast to the villagers, embrace all the festivities. As there are no Cazees, any Mulla can read the Khûtbâ. After a seven days' honeymoon the bride returns to her parents for a time. No ceremonies are

observed on a birth; a girl comes into the world unnoticed, and the father is scarcely informed of it; if a boy he generally gives a dinner. The wife is rarely of the same tribe as her husband, the Somâl being very averse to marriages among relatives, however distant the connexion, and they are very Scotch-like in their recognition of kinship. Among the Mijjertheyn, the mother of any of the Sultan's children being of his tribe, or even of the "Darrood" division of Somâl, disqualifies them from the succession; the Sultan must be the son of a "Bhadir," a woman of the "Dir" division of the Somâl. Marriage between cousins—the rule with Arabs—is particularly abhorrent to them, but it has begun to obtain here of late in the Sultan's family and a few others, the example probably having been set by the Arab residents, or by Somalies returning from Arabia. The Somâl are particular about their honour and the reputation of their wives; widows are generally married by one of the husband's brothers or relations. It is customary for guests arriving from a journey to remain in the house during meals and for conversation only, and not to sleep there or occupy the house as an inmate.

The Khûtbâ in the mosques is read for the Sultan of Turkey, as it is in Aden; the Somâl know not of the Khedive of Egypt, and imagine the Sultan to be the ruler of the universe, and all European and Asiatic nations his subjects. Like all Africans, they are very superstitious, respect omens, believe in geomancy, and have a great dread of the evil eye and of witches, "Komayu," who are said to work spells on a man until he wastes away and dies. When a man meets one of these ladies he covers up his face and mutters God's name or the "Laboul," and endeavours to terrify her by threats. They have no reverence for trees, heavenly bodies, &c., nor any traces remaining, with one or two remarkable exceptions, that I could discover, of their old paganism. They are troubled with but few diseases, and have little need of medicine; they have a remedy for ulcers, and know how to heal spear-wounds quickly by applying the powdered bark of the Kûrrârâ, which is a powerful styptic. The wound of a poisoned arrow is invariably cut out, but the universal panacea is the actual cautery; a good dose (a few pounds) of ghee is also very efficacious in internal complaints. Small-pox commits its ravages unchecked, inoculation being considered "harâm," any one undergoing it being doomed to eternal perdition.

The Mijjertheyn are considered by the Gulbêdh tribes as superior to them in two things, viz. security of life and property, and strictness in

religious duties, but are looked down upon for their poverty and meaner way of living. The Mijjertheyn, however, are superior to all the rest of the Somâl in the attention paid to education, a much larger proportion being able to read and write than in any other tribe. They have, unfortunately, managed to earn an indifferent reputation, from the treacherous murder, on several occasions, of shipwrecked seamen, but there are at least as many instances of their kindness and hospitality to those thrown on their shores, and I am inclined to think their behaviour is due more to the wanton and reckless acts of a savage than to any bloodthirstiness or cruelty of disposition inherent in them. This tribe alone, I believe, of all the Somâl, does not smoke tobacco, considering it "harâm;" the little required here and by the Wursungalli is imported from Moculla by the vessels taking guano from Burnt Island. The only trade followed here besides that of blacksmith, which is peculiar to the Somâl, is that of sandal-making; the jewellery worn by the women is of Arab manufacture and is brought from Moculla. The arms used by the Somâl are a kreese, a buckler, and two spears or a bow and arrows; the spears used by them are of many different shapes and sizes, all having names. The bow and poisoned arrow are common to all the Somâl, but more especially the Wursungalli, who are very expert. The Mijjertheyn do not seem to be at all good shots; the bows they use are large—six feet—and the arrows about a foot and a half. The poison is here extracted from two trees—the Minhiddo and Abertehi—by Midgâns; no one, man or woman, must be present while it is being prepared, or it has no efficacy. The only means the Somâl have of obtaining fire is by the primitive method of rubbing two sticks together; three trees supply suitable wood for this—the Dêr, Néarer, and Khu. Flint and steel are unknown. The games of the Somâl are numerous but very simple; two of them are "Shâh" and "Shunterad;" the former is the favourite, and is played with twelve stones or shells: it is very similar to the Arabic game "Sudur." They are inveterate gamblers, and frequently lose all their property. From their intercourse with Aden, various Indian and English games are being gradually introduced among them.

Though the language spoken throughout the whole country is substantially the same, and a man of one part is intelligible in any other, yet the difference between the Burri and the Gulbêdh is at least as much as the difference between the Arabic of Egypt and Yemen; this lies noticeably in the idioms, and in the usage and pronunciation of certain words;

for instance, a camel in the Gulbêdh is called "Awur," in the Burri "Ratti;" a foot in the former is "Loog," in the latter "Uddin;" a girl is "Gubud" and "Gubuj" respectively.

The language, though not copious, seems expressive, and sounds not unpleasantly. The Somâl delight in similes and proverbs, and consider a speech consisting of a string of short sentences and aphorisms as the height of eloquence; they are always very anxious to speak well in council, and on such occasions the speaker is listened to with respectful attention until he has finished. They are not destitute of poetry, and frequently recite long poems or kasidehs, generally on the exploits of the tribe, like the Bedouin Arabs. I give a few specimens of their proverbs:—

Gud wulba bahulki kodai aiyar dalolkisu dunko jirra ôg.
Every animal knows the windings of its own hole.

Bedwi bunder gai wa dubêr masâjid gai.
A countryman in a town is like a donkey in a mosque.

Rug beyn wa shêga, beyn se ma mahmâho.
Men lie, but proverbs never.

Dôn ba aff eyn mugur ba ku wur heisa.
The reed is acquainted with both the water-hole and the mouth—*i.e.* he knows both sides of the case.

In durr laddista wa dodai in dul mughalu lunkudasi wa dêrta:
To wear white clothes is easy, but to become a citizen (in manners) takes long.

Regarding the origin of the Somâl, it seems more than probable they are descended from a number of Arabs who immigrated into the country, and, mixing with the Galla inhabitants, soon multiplied and drove back into the interior all those, Christian and Pagan, who refused to conform to their religion, and thus occupied the country they now hold. Their language and traditions both support this hypothesis. The former is composed almost wholly of words derived either from the Arabic or Galla tongues, the latter predominating, and their traditions universally refer to Arab ancestors, whom they hold in great veneration. They assign a period of between four and five centuries to this immigration, which was probably from Hadhramaut, and speak with pride of the readiness with which the Moslem faith was embraced, and the fact of its having been introduced without the intervention of the sword. I

learnt at Hunda that the Mahra tribes have a tradition that the Somâl are descended from them, and they call them invariably "Beni Am," or "cousins," to this day. The name of Somâl, and the time when they first began to be called by it, still remain in obscurity. I expected to have found some light on this point in the Kitâb Futuh-el Habsh, but have been disappointed, as that work gives no account whatever of the early history of this race. The root of the word in Arabic (صمل) is, according to the Kamoos, in one of its significations, "lofty hills covered with trees," and this name may have been applied to the country (and appropriately so) by the Arabs; but it does not appear to have been so known to the ancient writers, and it strikes me as possible that it may be an anagram of the word Mosyllon, the ancient name of Berbera or Kurrum: for the whole region, as far as Cape Guardafui, was called the Mosyllitic Coast. These are, however, mere conjectures. The Somâl distinguish between the two sides of their country by the terms Burri (the eastern) and Gulbêdh (the western); these are well known to and recognized by the Arabs, by whom they are named Makhar (مخر) and Dabir (دابر) respectively. The former includes the Mijjertheyn, Wursungalli, and Dulbhanta tribes; the latter the Habr Awal, Habr Tul Jaala, and Habr Gerhajis, &c. These terms are quite territorial—not tribal, and are more comparative than nominal. Thus Berbera is Gulbêdh to Kurrum, and Meit is Burri to Ain Terâd. The Gulbêdh tribes are much more turbulent and predatory than the Burri, and are in a chronic state of warfare and anarchy; while the Burri are, as a rule, peaceable and orderly, and generally loth to shed blood. The same customs obtain through all the Somâl, and some of the old pagan rites are still retained. Like the races north and south of them—the Afer and Sowahili—the Somâl are of the Shafeea school of Moslems. The Mijjertheyn is the only tribe under the sway of a Sultan; the Habr Awal, Wursungalli, and Dulbhanta have Gerâds, and the Ugâden have a Chief called Ogass to reign over them: the authority of all of them is more or less nominal, and is almost limited to collecting men in war. The present Sultan of the Mijjertheyn is a boy of ten years of age, and the country is under the regency of his uncle, Moosa Othman, in association with three great-uncles. Moosa would have been elected Sultan on the death of his half-brother, Mahomed, according to custom, but he was ineligible, as I have already explained, on account of his mother being a Wursungalli, one of the Darrood tribes. The boy's mother is a Habr Gerhajis woman and a Bhadir. The Mijjertheyn are undeniably the

most inoffensive of all the Somâl; their country is extensive, reaching from Koll to Gerâd, a town on the east coast a considerable distance south of Ras Hafoon. The "ashoor" collected at Bunder Murayah is distributed among the Bhadir families there; the Sultan receives a share of it at this and two or three other towns, but his revenue is decidedly limited. "Abbans," or protectors, have to be taken here, as at Berbera, by Arab and other merchants frequenting the port, but they do not receive the same percentage or commission, but merely a small present. In the Gulbêdh these men are necessary to the stranger; but here, where there is ample security of life and property, they are a mere tax.

There are three outcast tribes, namely, the Tomal, Midgân, and Ebir. The first are blacksmiths exclusively, making arrow and lance heads, fish-hooks, and such like small requirements of the people. The second, Midgân, are a very numerous body, and have no particular occupation, but usually engage themselves as servants, herdsmen, &c.; these two classes intermarry among themselves, and sometimes also with the Somâl. The last race, Ebir, are the pariahs of the land, and are distinct from and inferior to both the preceding; they are by profession jugglers, and perform at weddings and feasts: it is reported that they habitually sell their children, and they are never allowed to accompany the Somâl in their wars. The origin of these outcast tribes is unknown to me; they are undistinguishable from the Somâl in appearance or feature, and are not slaves—for there are plenty of these, domestic slavery being rife throughout the length and breadth of the Bur-el-Somâl.

The coast from Murayah to Alloola has three towns not laid down in the charts, namely, Gurso, Kesulli, and Habo. Alloola is a larger town than Murayah, but its houses are all of matting, there are none of brick; it has the advantage over the latter place of having a lagoon, or circular bay, affording very fair shelter for native craft, while Murayah is an open roadstead. The exports and imports of the two places are the same. Water is as scarce at Alloola as at Bunder Murayah; buglas generally water at a place a few miles east, named Booah, where there is an unfailing supply. Alloola and several of the neighbouring villages are inhabited mostly by the Sowarkeroon tribe, a savage clan of the Mijjertheyn. The country around and to the south belongs to the clan of Othman Mahomed. The inhabitants of this coast, though not exactly deserving Ptolemy's name of Troglodytes, are in truth little removed from savages, and use the holes and caves in the high range of hills overhanging the sea to store their products and articles of export in during the close

season. From Ras Asseer (Cape Guardafui) to Ras Hafoon the coast is bleak and sterile, with two or three fertile valleys. The northern half, to a little beyond Ras Binna (or Bashkail), is bold and precipitous, while the lower part is low and sandy. It is very thinly peopled, and has only two or three villages and one town, Hunda. The "khors" or bays on the north and south sides of Ras Hafoon are used as harbours during the south-west and north-east monsoons respectively; the isthmus is a narrow sandy strip six miles in breadth, and covered with camel grass and Shora bushes; there is a hamlet on each side, but sweet water is only obtainable on the south. On the top of the square table-land of Hafoon are extensive pastures, on wbich camels, horses, cattle, and sheep are grazed in the season. Fish are plentiful enough, and furnish the means of subsistence to the coast-dwellers, but the inland population hold fish as much in abhorrence as fowls. Sharks' fins, for China, are an important article of export, and several Mahra Arabs reside here for the purpose of capturing the fish. Hunda is a straggling town of mat huts extending over two miles, with a population varying from five hundred to one thousand, according to season. The men are all fishermen or frankincense-gatherers, and the women employ themselves in weaving mats, of which bales and bales were lying ready for shipment. The commerce of this place is confined to the Sowahil and the Arab ports Moculla and Sheher, the former supplying corn, and the latter cloth, dates, &c. The exports are "mulij," frankincense, shark-skins, ambergris, and matting. The supply of ivory has almost ceased, and there is only one elephant-hunter left in the town. The houses are all circular and portable, and are erected in two or three hours—a light framework of wood with a double layer of mats over it, and the house is complete; a small courtyard or kraal of thorns is then made in front. The doors all face north or south, according to season, as the wind is very high and inclement. At this time it was very cold, and the sharp contrast between the climate here and at Bunder Murayah, where the heat was peculiarly fiery and suffocating, was decidedly unpleasant. The country close around is low and barren, the soil being sand, detritus, and coral overlying limestone. Coral and shells are met with miles inland, showing that the country has been at some former period under water; the caverns and watermarks on the cliffs of Ras Hafoon are further evidence of this. The vegetation has the usual appearance—salsolaceous plants, with a few doum palms and a stunted growth of acacias scattered over the surface. About a mile to the north of Hunda the shore takes a

curve which is not marked in the chart; bugalows anchor here—the only sheltered spot to be found. I sounded seventeen feet close in. Close by is a large wady forming a salt lagoon in the monsoon; its broad shallow bed shows, however, that much of the rain is absorbed on its journey, and that little finds its way to the sea. The residence of the Sultan is at a place called Adowa, about thirty miles north-west of Hunda; it is close to the Wady Jael or Jumbulhoody. The halting-places between Hunda and Bunder Murayah are Sehow, Adowa, Modeyaum, Yerân, and Eylgâl, averaging about twenty miles from each other; the last place is in the Wady Yeran, which rises in a plateau of the same name, and enters the sea near Bunder Khor. Two other places near the road are Sussi and Gulool. The two most important valleys between Ras Asseer and Hafoon are the Wady Tohen and the Wady Jumbulhoody, called in its upper part the Wady Jael. The soil of the former is rich, and produces maize, tobacco, jowaree, dates, Theban palms, tamarinds, plantains, and onions; the introduction of most of these is due to a Hadhramaut Arab who settled here some years since, and taught the inhabitants how to cultivate them. The Somâl, I believe, are ready and willing enough to turn to agriculture and grow their own corn, but they require some one to set them the example. The eastern point of this country is formed of a series of hill-ranges or plateaux, known as Jebel Goraâl, Girdif, and Bor Burhai; they are tolerably well wooded, and are rich in valuable gum-trees—frankincense, dragon's blood, tragacanth, arabic, &c. And here I may remark what a very unnecessary mystery and puzzle has been made of the name given to this horn by the Portuguese—Cape Guardafui; Bruce insisted it should be called Gardefan, or the Straits of Burial, and others have derived it in ways equally fanciful—even the accurate Cruttenden was misled. It is, in fact, simply the native name for this part, and is the only one known to the inhabitants, viz., Girdif or Girdifo. By the local shipping and by pilots, however, the point is usually called by its Arab name, Ras Asseer. The only Europeans who have ever traversed this country were some of the troops belonging to the Bombay column of the army in Egypt in 1801. The transport in which they were returning to India having been wrecked near Ras Hafoon, they succeeded, after great hardships, in making their way along the coast to Bunder Alloola, where they were protected and entertained by the natives until they were taken off, about two months after. The watershed of all this country is the southern face of the high range of limestone hills fringing the

north coast, and, as indicated by the Nogâl, Jaeel, and other rivers on this coast, clearly lies from north-west to south-east. The Wady Jaeel, called in its upper part the Wady Gebee, rises, I was informed, somewhere near Currum, and after a course of 200 or 250 miles falls into the sea about ten miles below Ras Hafoon, at a place called Hashiree. The Wady Nogâl enters the sea at Illig, a place five days' journey further south.

The ancient geography of this coast, as given in the oldest and best account we have of it, the "Periplus of the Erythræan Sea," has become more clear and intelligible since our knowledge of it has increased, and we have had the accurate surveys of the Indian Navy to refer to for its elucidation. But although the more remarkable geographical features are easy of recognition, from the fidelity with which they are described by the author, there is yet considerable field left for conjecture with regard to many places. One cause of this is the want of uniformity in the names given, some being Greek, some native, and others Arabic; this is perplexing, and warns us not to rely too much on them, though one of our chief means of recognition.

The first place mentioned in the territory now occupied by the Somâl is Mundus; this I consider to be Zaila, on account of its description as a safe anchorage under the protection of an island—a circumstance that suits Zaila alone. The title of emporium given to it, the peculiarity of its exports, and the fact of the course being from hence eastward, are confirmatory of this view. We now come to Mosyllon, the most difficult, as it is the most important, of all the localities we have to discover the site of. It was the chief emporium on the coast, and is described as a promontory and a bad roadstead. According to the distances given, it ought to be carried at least a hundred miles further east, but in fixing it at Berbera the chief inducement is that the latter holds preëminently the same position that Mosyllon did, as the principal town on the coast, and this appears to me an argument of sufficient weight to turn the scale in its favour against all other considerations. The latitudes and longitudes of Ptolemy add greatly to the confusion here, for they are at variance, and irreconcilable under any circumstances. The evidence, in short, is against Berbera, but the presumption is much in favour of it. The river of Nilo-Ptolemæon may be fairly identified with the Wady Maareg at Meit—the distance given of two days' sail, or one thousand stadia (100 miles), coincides sufficiently. Tapategè is uncertain, for there is no clue, either of distance or site, to guide us,

and I can find no name at all similar to it, but it lies between Meit and Bunder Murayah. The locality of the lesser Daphnon is equally doubtful, and for the same reasons. It may possibly be the river near Bunder Khor or Butialo, called "Tugwena," "the large wady," by the natives. Cape Elephant is, of course, Ras Feeluk, known on the spot as Bor Moog. The greater Daphnon, or Akamai, is unmistakeably identical with the Wady Hakên, or Rio de Santo Pedro of the Portuguese, which, as I have already described, debouches from the hills between Gurso and Murayah. This is the sole instance in which both the Greek and native names are given, and it enables us to establish the identity of the place beyond a doubt. The river Elephant must be the Wady Afkaliya, that enters the sea near Alloola, a short distance east of Ras Feeluk. From this there is no place mentioned until Cape Aromata or Guardafui, the most prominent feature on the coast, whereas we are expressly told the coast falls to the south. Continuing along here, the first name we come to, Tabai, was formerly identified by Dean Vincent with Hafoon, but it must now be referred to Ras Binna, reserving Hafoon for Oponè. The description of Tabai, the name (given by Ptolemy as Panon Komè, evidently the village of Binna), and the distances, are sufficiently conclusive on this point. Between Aromata and Tabai also it is called the Bay of Beyla; now Belwa is a village about twenty miles from Binna, being at the north of the bay of which Ras Binna is the southern point. That Oponè or Ophonè is Hafoon cannot be doubted—the similarity of name is too striking to be passed over, and the fact of it being called an emporium, a character it still deserves, puts it beyond dispute. There is no port anywhere near to the south that answers to the description at all, while the whole produce of the valley of the Jaeel is brought here, and Cruttenden, who compares the fair to that of Berbera, testifies to the number of merchants resorting to it, and to the value and briskness of the trade carried on.

Having found time, whilst waiting at Hunda, to pay a hasty visit to the Wady Jaeel, the luxuriant vegetation of which was described to me in very eulogistic terms by the natives, I hired a camel and started one afternoon in company with five Somalies. Our direction at first lay S.S.W. as far as Bor Kalha, a low plateau of seven or eight hundred feet elevation, when we turned W.S.W., and after three hours halted for the night at the edge of Khor Hurdea. At midnight we rose again and made our way over a plain of sand-hills topped with bushes to Eyl Dokanaya, a bubbling spring of brackish water on a low eminence,

which we reached just about sunrise. Large numbers of female camels were being watered at this and at a similar spring close by. The water was quite warm when we arrived, but became cold as the day advanced. Below the sand the hillock appeared to be composed chiefly of sandstone, but also limestone and agglomerate. The north point of Hafoon lies direct east of this, and the edge of the table-land north of Hunda E.N.E. After resting here for a short time, and receiving the customary peace-offering of camels' milk from the Bedouins, we pushed on again, and travelled for some hours over a sterile, stony plain, thinly grown here and there with acacias, until we reached the Wady Jaeel, along the steep bank of which we continued until we found a path, when we descended and camped in a high well-sheltered patch or island in the bed. On approaching the wady, the appearance of it at a little distance—a bright green streak in a brown, sterile, and hilly plain—was singularly pleasant and refreshing. The banks are deep and precipitous, varying from fifty to two hundred feet, and the bed is in no part less than seven hundred yards wide, and in most places much more, showing that a very considerable body of water is carried down in the monsoon. The bed is extremely well wooded with some large trees, especially in the centre, where the ground is high, forming islands in the flood; the wild date and doum palms were particularly abundant, the fruit and leaves being an important article of commerce. At this time no water was running, but there were long shallow pools or reaches in places, and it could be obtained anywhere by digging a foot or two deep in the sand. The few people I saw were very friendly, and appeared quiet and industrious, but miserably poor; the men were employed in splitting, drying, and stringing "mulij," and the women in mat-weaving: their mat huts were scattered all along the wady, with thorn kraals for the few half-starved sheep and goats. There is no cultivation, and the fruit of the wild date seems a staple article of food. The river is said to have been the resort of wild elephants until three years ago; since then they have only reappeared once. The next morning we pursued our journey up the wady, direction west, passing after a short time a broad, deep wady on our left, called the "Tug Bedoo," and about 1 P. M. halted near Bor Mogâh, a high tabular-formed hill. The character of the country remained unchanged, but the vegetation in the bed of the wady gradually decreased, while the banks became deeper. The universal drought in the country had visited this place; they had hardly had any rain for a year, and the river was dry in consequence. All human

habitations had now ceased, and I was told that none were to be met with for a long distance in front; I therefore saw no advantage in pushing on, and began to retrace my steps. We returned by the same road, and arrived at Hunda the second day. From the time of actual travelling on both ways, thirty-six hours, I had probably ascended the river about forty-five or fifty miles. The hills were all entirely destitute of verdure, and I saw no frankincense or gum-arabic trees anywhere on the journey; the only animals I noticed were the hyena, jackal, hare, and two species of antelope, and there were said to be leopards. Birds were very numerous in the wady, but none on the plains.

The Bur-el-Somâl is altogether a most interesting country, and it is no little opprobrium to us that it has remained so long a mystery, for there are few which offer greater attractions of research and greater facilities for exploration to the traveller. True, we have had a few glimpses at it, and the writings of Cruttenden, Rigby, and others have left little to be gleaned superficially, but how little we know of the interior, and of the tribes beyond the immediate seaboard: absolutely nothing! The geography, resources, and productions of the country; the condition, distribution, and inner life of the people, have all yet to be written, and offer a wide field for inquiry to the first European who shall visit them.

Supplementary Vocabulary of Somali Language.

English.	Somali.	English.	Somali.
ination ...	Dthair, mukruh.	Betrothed.....	Donunta
e.....	Eiee.	Big toe.....	Sôl.
pt (to)	Ugaroh, yail.	Bird of prey.....	Hadth ka adug.
se (to)	Bidthai, tohm.	Bite (to)	Gânin.
ss	Tulâb.	Bitter	Kurrâd.
tery	Sinno.	Blade	Birti.
onish	Wâno, tulh, luttuli	Blood-money ...	Mugk.
n (to)	Wa kaga, wa yeha	Boast (to).....	Fân.
y.....	Dirir, dugâl.	Boil (to)	Kurri, kûl.
:	Wa nolaya.	Bottom of vessel.	Sulki, gonti.
nd	Yeib.	Boundary.....	Sorin.
er	Mekkawi.	Bracelet	Kurdâs.
let.....	Merdas, musalleh.	Brain	Muskah.
stor	Awoowa.	Branch	Kûd, lân.
;	Unko.	Breast-bone	Sakár.
y	Arro.	Breath	Naif.
'er.....	Ille.	Bring (to).....	Kusso, kén.
white	Eboor.	Bring forth (to)	Umul.
ill	Dundumo.	Broad	Bulâd.
lope	Soghâro.	Broom	Mufeek.
hing.....	Wah.	Browse—to graze	Dâk.
tment	Kakôba.	Bud, blossom ...	Mirro.
arance	Mithub.	Bury (to)	Nabâl, âs.
ery	Dunin.	Bulrush	Allâlo.
.....	Ingêg, abâra.	Bush, brushwood	Lan.
tain (to) ...	Hûbso.	Bustard	Waradâda.
it	Ogul.	Bustle—woman's	Shushob.
ma	Khaho.		
ke	Sujêda.	Calf	Wêlu.
.....	Hainsa tule.	Calf—of leg	Kôb.
		Call out (to).....	Geilo.
.....	Lâf.	Camel	Geyl, ratti.
:—of river	Kûrh, dân.	Camel, young ...	Nirgu.
—of tree ...	Jirrif, myrah.	Cameleer	Geylijir.
(to) (a dog)	Aeya.	Carpenter.....	Kurâr.
, wooden...	Hêro.	Centipede	Angarâra.
s	Kharaz.	Chain	Silsila.
:	Affki.	Chameleon	Ratti jirjiroli.
d	Bud.	Cheap	Wajibaya.
tead	Sereer.	Chest	Lâbta.
a (to)	Yakaeen, Hûreyn	Chew (to).....	Rabsi.
ve (to)	Rumeiso.	Chief, elder	Bogor.

English.	Somali.	English.	Somali.
Child	Inan, ilmo.	Drop	Tifikh, diba.
Cholera	Dabahow.	Drought	Abar.
Circle	Jirinjir.	Dung	Salo.
Clever	Waeel.		
Clothes	Sōf.	Eagle	Nabodi.
Cloudy	Hôsis.	Earring	Hil kutho.
Club	Bûdth.	Earthen vessels	Hân, jelhud, kalah.
Collar-bone	Kulhun, koreis.		
Colour	Assal.	East	Kurru ka sohbi.
Comb	Suguf.	Easy	Yesir.
Come (to)	Laimo, emi.	Eclipse	Madobahti.
Coney	Bouna.	Edge	Affki.
Cooking-pot	Dirri.	Enough	Bis, iskudda.
Coral	Shaab.	Envoy	Urgi.
Corner	Gês, burbur.	Especially	Bahan.
Cousin	Ilmo ader.	Estate	Hijje.
Cover	Dabôl.	Evening	Gulâb.
Cowherd	Lohjir.	Evil-eye	Il.
Cowry	Alêl.	Exaggerate	Gâsi, kûsin.
Crab	Singo.	Extra, irrespective	Hoorhor.
Crack	Dillâh.		
Crest, ridge	Door.	Faint	Sôhadin.
Crooked	Kuloh.	Family	Jilb, rer.
Crow	Tuker.	Father-in-law	Sûdûg.
Crowd	Shir.	Face	Hagâg.
		Fetlock	Umaoon.
Dance	Sâb, shirbo.	Fibre	Myrah.
Daughter-in-law.	Saduk banohai.	File	Sofa.
Decrease (to)	Wa dinmaya.	Fire-place	Dhurdâr.
Deer	Garanook, baira.	Fire-sticks	Mudug.
		Flay (to)	Kul.
Demand in marriage	Dân.	Flea	Anjirbodu, tukfi.
Device	Tub, ebâro.	Flower	Mun, obâh.
Dig (to)	Kôd.	Foal	Durmân.
Discourse	Nuk.	Fold—for cattle.	Duri.
Divorce	Tulak, fûrrai.	Foolish	Fûdthêd.
Divination	Fal.	Foot	Loog, uddin.
		Forefinger	Murdisso.
Doum palm, fruit of	Mulij, gêru, hêgo,	Forge	Dubud.
Dress, man's	Murro, hôd, kaid	Fork	Dadáb.
Dress, woman's	Murro gur, gúl.	Frame—of house.	Diggo.
Drive (to)	Kahai, wud.	Fresh	Usub.
Dry (to)	Wudh.	Friend	Gânsâr, wajaal.

English.	Somali.
t.....	Murro.
ı.....	Dawa, kon.
ut	Kurrin.
e-dubba	Komba.
st	Wagobi.
ly	Warér.
.....	Soreea.
ffe	Hulgirri.
.....	Tug, sôh.
.....	Ebâhi.
ıdmother ...	Aiyeyu.
shopper.....	Kŭbŭja.
f.....	Eil.
der-tooth ...	Gôs.
ıse—sand ...	Fuku.
r (to).....	Wa kuri.
ıt (to)	Abâdh.
ıo	Rubsh.
ıt	Murti.
—sea	Heibjog.
lle	Dabki.
l.....	Adag.
het	Gudimo.
l-dress, man's	Firrên, kori bâl.
l-dress, wo-r's	Gumbo.
ıa	Elân.
sman, shep-l	Bulsho, kûrjog.
n	Moosa, hôr.
opotamus...	Jêr.
:	Shirhi.
:	Hângôr.
ıoe.....	Gobeyahan.
itable	Deksi.
e	Min, agul.
an being ...	Kôf, rug.
ıa	Wuraba, durwa.
ıa	Munso.
ination	Mulha.
oper	Maeka.

English.	Somali.
Indignant.....	Oomul, arro.
Indigo	Gubuldi.
Influenza	Hêrgôb.
Information	Og.
Jay	Dodooli.
Join (to)	Kubun.
Joint.....	Hubin.
Jowaree	Phirphira.
Khareef season...	Haja, gôgi.
Kidnap (to)	Wa kubbo.
Kindle (to)	Shid
Kindred	Dowanunai, yesudunai.
Kind.....	Maaroof.
Knave	Naâs.
Knife	Mingaf, mindi.
Lake.....	Jiddan.
Lamb	Neelo.
Leather bag.....	Ohle.
Leopard	Shabêl.
Leprosy	Burus.
Let go	Seeda dibi!
Lick (to)	Lêf.
Limp (to).....	Dutis.
Line, fishing.....	Edâd.
Line, straight ...	Jerrah.
Liver	Bêr.
Lizard	Gurêta, molah.
Locust, young ...	Kûrunkûro.
Lynx	Jumbil.
Lift (to)	Sid.
Luck	Aian.
Marrow	Dûh.
Matting	Dingâh.
Mature	Kungâd.
Mark	Tilman.
Meteor	Wurrun.
Midwife	Amaliso.
Milk-jug	Del.

English.	Somali.	English.	Somali.
Mist	Eiriyan.	Proverb	Mahmah.
Moon, phases of	Adoo, gudur.	Pull (to)	Jid.
Mother-in-law	Sadoh.	Putrid	Kurrun, dûg.
Moustache	Sharob.		
Mungoose	Sogor, kadaf.	Ransom	Mutha furrûd.
Mussuck	Kurbid, hub.	Recognize (to)	Gurrun.
		Relate (to)	Sheiga.
Necklace	Kôl, jilbud.	Retreat (to)	Dûrug, bagha.
Needle	Mudtha, arbad.	Return (to)	Sônogo.
Night attack	Mirr.	Rhinoceros	Weeil.
Nipple	Nâs.	Ribs, true	Surur.
Noon	Had kurru.	Ribs, false	Dinah.
Nullah	Ill, tug, deh.	Robbers, gang of	Ghatha, kowlo.
Number	Tirro.	Road	Hillin, doh, toob.
Ochre, red	Dobo.	Sailor	Sôfan.
Old woman	Dûk, habr.	Satire	Madh.
Only son	Muddi.	Satiated	Dirgi.
Ordeal	Dubmurris.	Seasons	Kurrun, dtheyir, heis.
Ornament	Seâghat.		
Oppressed	Ell.	Season—trading	Bud furan.
		Season—close	Bud hiran.
Palm of hand	Bâbâoh.	Seaweed	Saaf.
Partition wall	Kakoba.	Secretly	Goomo, doomo.
Pasture	Gedu, doho.	Screen	Lahed.
Patience	Sabr.	Seize (to)	Kubbo, kakad.
Peace	Mubbud.	Senna	Jelleli.
Pebbles	Gorôro.	Separately	Gooni.
Peel	Dér, jirrif.	Shake (to)	Gereer.
Peel (to)	Dil.	Shank	Dûdun.
Petticoat	Haiman, tufih.	Shell	Gûmbal.
Phlebotomy	Toobin.	Shin	Hûg.
Pith	Düh.	Side	Dun, owlul.
Plan, outline	Haredth.	Sinew	Bugun.
Plummet	Buldi.	Smooth	Dalâl.
Poetry	Gayrâri.	Sole of foot	Ugti.
Poor	Sabol.	Song	Gobai, hes.
Porcupine	Hor, anakob.	Sound, noise	Sunkâd.
Porpoise	Hûmbero.	South wind	Foora.
Portion (marriage)	Yerrud.	Spear-stick	Lameyu, dubbi.
Post	Udubteer.	Split	Jeha.
Potter	Deriasumeis.	Spoon	Fundâl.
Praying	Watukanaya.	Squirrel	Dabagâlli.

English.	Somali.	English.	Somali.
l (to).....	Toogo, hud.	Turtle	Deen.
.e	Ukûd, kûreed, ludeb.	Twilight	Feedth.
		Tyranny	Gûrdûr.
per	Fûrr.		
t	Boorun.	Waist	Dubr.
›lus	Dêrah.	Wasp	Dibirlâh.
llow (to) ...	Luk.	Watcher of herds	Allola, egy.
›p (to)	Feek, hadth.	Water-hole	Lâs, mugur.
et	Mahân.	Wax.....	Hunja.
		Weave (to)	Fulki, fulôg.
.....	Dubbo.	West	Kurru ka dah.
e	Duddin.	Wheat	Gurreen.
(to)	Jer, dilâh.	Widow	Armali.
-peg	Dissun.	Wig	Teemo arbedh.
;ch.....	Rurro,kibid,hurur	Wild animals,carnivorous	Bâhal.
ıg	Son.		
aten (to) ...	Absi, dugal.	Wild animals, herbivorous ...	Ugâd.
mb.....	Sôl.		
.t	Haj.	Window	Takat.
;s	Bilkâb.	Witch	Komeyu, dabato.
.....	Dôr.	Wizard	Komê, bida.
ent	Dâd.	Wood, heart of...	Lufti.
ks	Rhâd.	Woodpecker ...	Eyoo, dandante.
ıble (to) ...	Kudkud.		
ık of elephant	Gân.	Young of wild beasts	Daláh.
;	Dôn.		

List of useful Trees and Plants.

Nos.	Names of Trees.	Uses.
1	Humâr (T. Indica)	The tamarind tree.
2	Weggir (Diospyrus Ebenus)	The ebony tree.
3	Dar (Aloe vulgaris)	The aloe-plant.
4	Ow (Hyphæne Thebaica)	The doum palm.
5	Meiro (Phœnix dactylifera)?	The wild date.
6	Gubuldi (Indigofera)	The wild indigo plant.
7	Jellelo Geyl (Cassia Senna)	The senna plant.
8	Jellelo Ari (Cassia)	Do. do.
9	Ankokib (Acacia vera)	Yields gum-arabic.
10	Adâd (Acacia)	Do. do.
11	Kurrâa (Acacia Babool)	Medicinal, fibrous, &c.
12	Yeib (Amygdalus communis)	The almond tree.
13	Mohr Add (Boswellia Bháu Dájiana)	The frankincense tree.
14	Mohr Madow (B. Carterii)	Do. do.
15	Boido (Boswellia —)	Do. do.
16	Yegaar (B. Frereana)	Do. do.
17	Deyib (Cedrus —)	The cedar tree.
18	Hassahdin (Pinus)	The Somali pine tree.
19	Didthin (B. Myrrha)	The myrrh tree.
20	Bôh (Asclepias gigantea)	Medicinal, fibrous, &c.
21	Gôb (Rhamnus Nebeca)	The jujube tree.
22	Hodthai	Yields a gum.
23	Gegabood	Medicinal.
24	Debbi	Lance-sticks and clubs.
25	Jirmal	Bark used in tanning, &c.
26	Higlo	Fruit eaten.
27	Ilkattus (Mimosa Serissa)	The Sirrus tree.
28	Gararoor	Edible berry
29	Marêr	Fruit and timber tree. (Fruit eaten.)
30	Ohob	Yields gum.
31	Gûmûr	Yields a fragrant gum.
32	Fillah fillah	The Arâk tree.
33	Adthi (Capparis Sodata?)	Twigs used in basket-making.
34	Maroh	Do. do.
35	Nidik	Yields gum.
36	Karûn	Gum and fruit tree.
37	Murayo	Fruit tree.
38	Dafaroor	

Nos.	Names of Trees.	Uses.
39	Sûksûk	Fibrous.
40	Durai (Ficus religiosa)	The peepul tree.
41	Birda (Ficus Indica)	The banian tree.
42	Doususso (Pistachia lentiscus)	Yields gum mastic.
43	Gulool	Bark fibrous, and yields red dye.
44	Angeel	Valuable timber and fruit tree.
45	Habaghadi	Yields gum.
46	Hig (Aloe)	Fibrous.
47	Minhiddo	Poison extracted for arrows.
48	Abertehi	Do. do.
49	Dunkâl	Do. do.
50	Owbutta	Yields gum.
51	Kaba Asaya	Yields a red dye.
52	Fooah (Rubia Tinctoria)	The madder plant.

ART. VII.—*Journal of the Excursion made by* Captain S. B. MILES, *Bombay Staff Corps, in company with* Mons. MUNZINGER, *from Howr, returning to Aden through the Fudhli Country, giving a general description of the country and of the several Arab tribes occupying it; as also a Report upon the Geography of the District by* Mons. MUNZINGER. Contributed by Government.

The country between Bir Ali and Aden, through which we passed, is occupied by four large tribes, the Wahidi, Deaybi, Owlaki, and Fudhli. These, with most other native tribes in South Arabia, became independent about 100 years ago, when the dominion of the Imaam of Sanaa (which had risen again since the expulsion of the Turks in 1630) came to an end over Yemen, and was confined to the walls of their own city. The old and simple patriarchal form of government was re-established by them; the leading man of a number of families becoming the Chief, or "Sultan" as he is termed, and retaining the succession hereditary in his family. This Sultan has no real despotic power, and is unable to take the life of any member of the tribe; he is indeed answerable to them for all his acts and proceedings, and his decisions, whether civil or criminal, to be respected, must be in accordance with the law of their religion and the customs of the tribes. In cases of emergency he consults the Sheikhs of the sub-tribes, whose advice he is bound to take, and act in accordance with, and in cases where the members of the tribe are not satisfied with their decisions, and in matters of dispute with other tribes, a council of Shereefs or Syuds is called for the final adjustment of the difficulty. These Shereefs are a great power in the State, and exert almost unbounded influence over the tribes in Hydramaut and E. Yemen; even among the wild Bedouins of the hills they are held in respect and awe, from their descent and consequent sanctity, and their superior learning. Few important matters, indeed, are discussed or entered upon without consulting them and obtaining their approval, and their advice is sought by all. In ceremonies, too, they often take precedence even of the Sultan: many of them make it their special business to act as peace-makers between contending tribes. These men are well known all over the country, and their mere presence is often sufficient to put off

an inpending conflict. The want of authority and power among these Sultans, despite their magniloquent appellation, may be accounted for by the absence of wealth or any large source of income on their part—the only means they have being the Ashoor, a sort of property tax, and transit dues, besides the profits arising from any landed property of their own. Most of this income, from whatever source derived, has to be paid away to the Bedouins as a retainer for their services when required, and to restrain them from lawless acts. There are no men of any real wealth in the country; indeed, the universal equality of fortune is rather a remarkable feature in this land. The form of government and relation of the different parts of the tribes, curious as they seem, are quite in accordance with the genius of the people, as is proved by their existence from the earliest times, and admit perhaps of a greater degree of personal freedom than that of any other country.

The population may be divided broadly into two classes, the settled agricultural people and the Bedouins; the former hold their land upon a military tenure, engaging to serve in time of war when called on and also pay a certain portion of their crops to the Sultan; the Bedouins subsist upon their camels, goats, &c., and what they can obtain from the Sultan, and from travellers, upon whom they levy a Syara, or road-tax. There are no nomads. The first of the four tribes I have mentioned to be noticed is the Deaybi, the smallest perhaps, but by no means the least interesting. The strip of country they occupy lies between the Wahidees and Awalik, and extends from the sea-coast to about 50 miles inland; it includes also a portion of the Wady Meifah, which they have obtained by purchase. They have no Sultan or Sheikh over them collectively, but each of their seven divisions, of which the largest is the Hull Abdullah, is under an Aba or father. They are undoubtedly descendants of the Himyarites, and are not a little proud of the name: they use it to this day as their war-cry; and the neighbouring tribes call them Deaybees or Himyars indifferently. They still retain, too, their ancient language, doubtless one of the several dialects of the Sabæan. It appears to be different from the Mahra. They do not speak Arabic with any purity, though most of them are acquainted with it, but mingle a great number of their own words, so much so as to be at times almost unintelligible.

The Deaybees are, in short, a very interesting people, and well worthy of a careful study. A short sojourn among them would, I am sure,

amply repay in its results any one who would undertake it. The other tribes around, who also trace their descent from the Himyars, are the Yafai, Naaman, Gūmmūsh, and Merkashi; the family descent of the first, however, I am doubtful about, and of the second I have no information. The Deaybees have a bad reputation everywhere for their marauding and rapacious propensities; but of the truth, or otherwise, of this, I had no opportunity of judging. To speak as I found them, I entertained a favourable opinion of their character.

The Wahidee tribe, one of the largest on this coast, takes its name from the founder, Abdul Wahyd, a celebrated Koreish chieftain who conquered a large portion of territory from the surrounding tribes, and established his principal residence at Habban, a town formerly of considerable importance. This tribe has lately become divided, and is at present ruled over by three different Sultans, viz. Sultan Ahmed of Habban, Sultan Hadi Abdulla of Bir Ali, and Sultan Saleh Nasir of Ezān; but their power, as I have observed, is merely nominal, and they are scarcely richer or better off than many of their subjects.

This tribe, whatever it may have been once, is not now held in much respect or fear by its neighbours for its warlike spirit or bravery; it is indeed, probably one of the least aggressive tribes in the country. They possess in the Wady Meifah one of the most fertile and productive districts of E. Yemen, and have consequently settled down for the most part into peaceful tillers of the soil, fighting only when necessary to repel marauding intruders. There are several large and thriving towns in this region, of which the two largest and more important are Hota and Habban. The former consists of an assemblage of lofty, detached, castle-like houses, and presents on the first approach a very striking and singular appearance. It is situated in a gorge of the hill on the banks of the Wady Amazeen, girt round on every side with high and almost inaccessible cliffs: hemmed in by these, and unapproachable except by the Wady, the form and size of the houses would enable the inhabitants to resist successfully an attacking Arab force.

The houses are of six to eight stories high, with very small windows, none of which are within ten feet of the ground, and the rooms are so low that one is barely able to stand upright in them. The average height of the houses appears to be about sixty feet; the material of which they are built is a tenacious clay mixed with lime, and the bricks made of his are so strong, though merely sun-dried, that several days' continued

rain does not affect them in the least. In the town proper there may be two hundred houses, and along the sides of the Wady, towards Kail, perhaps three times as many more: altogether I should put down the population at from 8,000 to 9,000 souls. The government is administered by a Sheikh named Sheikh Ahmed el Haider, under the Sultan of Habban, for whom he is supposed to collect the taxes, receiving a certain share for himself. He appears to have considerable influence over the people. There is a Cazee, but he is subordinate to the one at Habban, and is a man of no learning.

There are two mosques in the town, a surprising and significant circumstance when we consider the size of the population. The Khutba. is read for the Sultan of Habban. The inhabitants are all musheikhs, or descendants of some great saint, and consider themselves superior to, and almost independent of, the rest of the tribe. They are a taller, fairer, and more slender race than the other Arabs we had met, and wear their long curly hair loose, or fastened behind by a band. They appeared an ignorant and superstitious people, and consequently very bigoted and fanatical; yet they are by no means strict Moslems, and are very lax in their religious duties, neglecting their daily prayers, except on Fridays, when the Sheikh, followed by a large crowd, proceeded in state to the mosque.

The conversation of the men was almost entirely free from the pious ejaculations so common in the mouths of Moslems in all countries. The women are very fair, but with a slight yellowish tint; of their looks I will say nothing, the general absence of female loveliness in Yemen being proverbial. They are dressed in the usual hideous long blue blouse or loose gown of the country, and their hair is worn in long ringlets round the head, which is rather becoming; they go about unveiled, and appear to have more freedom than is generally accorded to the sex in Moslem towns.

The grains sown here are wheat, jowaree, bajree, barley, and tahef, and four crops are reaped yearly, viz., one rain crop and three irrigation. The fields are very neat and regular, and the state of the cultivation generally very superior: the rotation of crops is observed.

The Wady is bunded for irrigation by numerous stone walls, for which the wells afford an abundant supply of good water, which is drawn up by bullocks, the mote system of India being employed. I

did not notice any difference between the agricultural implements here and those in use near Aden. There are no fruits cultivated besides dates and lemons. The few cattle owned by the inhabitants are sent to the neighbouring deserts to graze under charge of Bedouins; sheep and goats are numerous; but there are no horses—these were introduced once, but the want of pasture rendered it difficult to keep them, and they soon disappeared. The only manufactures are a thick felt for camel saddles—in which both men and women are employed—and a coarse cloth for lûngis; the woof of this is spun by the women. Dyeing is carried on extensively, the indigo being imported from Bir Ali and Aden; for, besides their own manufacture, they prefer to import cloth from Aden unbleached, and dye it themselves, considering it cheaper. Blue is the universal colour worn here by both sexes, and we found no other dye used.

There are a few carpenters and blacksmiths in the town; the goldsmiths are Jews from the colony at Habban, who travel about the country, working where required. Hota has no market; but once a year, on the 12th Rajab, a great fair is held at the shrine of a certain saint near, at which the Bedouins assemble in numbers, and exchange their products for the various commodities they are in want of, such as cloth, dates, &c. At other times there is little traffic going on; indeed, as will be perceived, the internal commerce of this country must be small, from the simple habits and few personal wants of the people, which render them almost independent of external sources of supply. Their ordinary food consists simply of coarse jowaree or bajree bread with ghee and dates, which are much eaten; very little rice is consumed; and the Arabs are not vegetarians by any means. The only beverage is Kishr, which here is an infusion of both coffee bean and husk. In Sanaa, W. Yemen, and Aden the husk alone is used; in Hydramaut they infuse the bean only.

A Hydrami never dreams of setting forth on a journey without taking his coffee with him. Kishr is not a very tempting drink, especially with the ground ginger and cardamoms with which it is always prepared; it is in taste very like weak coffee, or perhaps like the mixture of tea and coffee drunk formerly under the name of twist in England. The husk, however, in these parts is more esteemed than the bean, as being less heating, and in the Aden bazaar it is more expensive, costing a shilling a pound. There is but one Fakih or

learned man in Hota, and there are no schools, but a few boys receive a little instruction during the month of Ramzan. Literature and art are at a very low ebb; indeed, they can scarcely be said to exist. Most of the Shereefs know how to write, and generally also the higher Sheikhs; but we neither met with nor heard of any real scholars, such as W. Yemen is able to boast of. The climate here during our stay was delightful, the air being light and exhilarating; at night it became quite cold, and we generally had a cool breeze throughout the day. It appears, however, to be a feverish and unhealthy place. We noticed very few old men in this district.

The town of Habban is irregularly built, on very uneven ground, in the midst of a plain of some 60 square miles in extent, interspersed with low hills of various heights and intersected by nullahs. This plain is bounded by a table range of hills to the north, and irregular serrated ranges to the south and east; its elevation is about 3,000 feet. Habban is not a large town, and contains only about 250 houses and between 2,000 and 3,000 inhabitants. There are, however, numerous Bedouin houses outside in every direction. The Jews number about 400 and dwell in a separate quarter; they have been here beyond tradition; and this is one of their principal colonies. Though very industrious they are wretchedly poor, and are not allowed to own any part of the soil: they are chiefly artizans, journeymen gold and silver smiths, &c.: the women rear great quantities of poultry.

On two eminences near the town are two watch-towers, each containing five guards, who keep a look-out over the surrounding country, and give notice of an approaching enemy. The houses are of much the same structure as at Hota, and of the same mud-coloured appearance. There is a small market. The fields around produce wheat, barley, tahef, jowaree, kinnib (dagoosa), and bajree, but no dates, coffee, or cotton. Indigo grows wild; and a species of aloe, of the fibre of which the common white rope of the country is made, grows abundantly. Cattle, sheep, and goats are scarce and dear. The supply of water is very limited, and procured only with difficulty from deep wells. This scarcity of water is the cause of the very limited extent of cultivation round the town, preventing artificial irrigation, and leaving the fields dependent on the rainfall for their supply; were it otherwise, the rich alluvial soil around would yield a grateful return to the agricultural labours of the inhabitants. The prices of food here

during our stay, were, for one dollar—3½ kelas wheat, 4 kelas jowaree, 4 kelas bajree, 10 rutl or pounds ghee, 16 rutl or pounds coffee, 10 fowls. The rutl here is smaller than that of Aden, being 13 dollars' weight, the latter being 16. The kela is a measure equal to three pailies of four seers. Salt is obtained from Nisab and Hazra, where there are mines of it. The kafilas to Nisab and Mareb, pursuing the same route as of old, when the Arabs were the medium of Eastern and Western commercial intercourse, take on tobacco, cotton, and cloth, and bring in return coffee, salt, &c. The present Cazee of the town is a young man; his father, the late Cazee, was a man of noted sanctity and learning, and of great consideration in the country. There are six mosques, the only whitewashed buildings in the place. The Khutba is read for Sultan Ahmed. There are about half a dozen reputed Fakihs, who subsist on alms, and perhaps by teaching a few boys to write; but there are no schools.

The Sultan is not a man of wealth, and consequently has not much influence. His house is almost entirely unfurnished, and he possesses but one slave, the little revenue he receives being nearly all expended in subsidizing the Bedouins, whom he is obliged to conciliate. The next tribe—the Owlaki—consists of two great divisions, each ruled over by an independent Sultan. The upper tribe, or Owlaki-el-Alian occupies the interior, and is at present under the rule of Sultan Awad Abdulla, whose residence is at Nisab, a large town situated in an immense plain. This tribe or branch is composed of two distinct families, the Beni Maan and Mahajir; the former, an offshoot of the large tribe of that name, is more immediately under Sheikh Fereed bin Rowees of Yeshbum, and is composed of 18 clans. This is the superior and more important family. The Mahajir occupies Nisab and the surrounding country under Sultan Awad: in it there are 23 clans, and it is a numerous family, having, it is said, about 100 villages.

The Owlaki is a warlike but not a predatory tribe. I am unable to hazard a guess at the number of the population; many of them are in the service of the Nizam of Hyderabad, and enjoy there considerable influence and wealth. The lower tribe, called the Awalik Ali Nasir, or the Owalik Ba Kāzim, are subject to Sultan Bu Bukr Abdulla at Howr, and hold the extent of coast between the Fudhlis and Deaybees. This branch may number about 15,000 souls, and is divided into, or rather consists of, two distinct parts, the Gūmmūsh and the Ba

Kāzim; the latter has many sub-tribes, of which the principal are the Shimai, Jar-elee, Hutli, Munsooree, Hakee, Marebee, and Hul Ba Jerādee. Of all these, the first one, Shimai, takes the lead, on account of the supposed superior intelligence and sagacity of its members. They are always the first consulted in matters of importance, and their opinion is held in much respect by the others; their protection, too, is necessary to strangers passing through the Ba Kāzim territory. The Shimai clan occupy the plain and district of Mongaa.

The next in importance is the Jarelee, who, being the most numerous, form the army, and are the chief strength of the tribe. The Gūmmūsh are a peculiar race, and though among the Owalik, not of them. They assert themselves to be descendants of the ancient Himyarites, and inhabit the valleys bordering on the Deaybees, with whom they claim kinship; their head-quarters are at Khubr. They are a brave people, and feared by their neighbours, to whom they seem superior.

A large extent of the Owlaki country is under cultivation, and they have numerous flocks of sheep and goats and herds of camels in their extensive pastures; they possess also a fine breed of horses—the only tribe in these parts that has any. The extent of coast line held by them is about 60 miles. The Sultan, Bu Bukr, succeeded his cousin Manassir some seven or eight years ago, when the latter, with his son Abdulla, was treacherously murdered by one Ali Abdulla. At the time of our visit Bu Bukr was in difficulties with his subjects in consequence of four men having been killed in anger, and unjustly, by his brother. The occurrence had taken place a short time previous; and the tribe were highly indignant, saying it was a departure from the customs of their fathers, and the same thing might happen again, to their dishonour, unless they asserted their rights at once. The Sultan was about to propose some reparation to the relatives, but, if not acceded to, a meeting of Syuds or a conference of the whole tribe would have to be convened for the discussion and final adjustment of the affair.

The custom of subjecting accused persons to trial by ordeal—Bashāa—as a test of guilt is still in use among this and neighbouring tribes, but is not much resorted to, unless for serious crimes. There are numerous methods, but the more usual one is the application of a heated knife to the tongue.

The Fudhlis are a daring and spirited tribe, holding the sea-coast and the range of hills from Mujatein to Imaad, a distance of nearly 100 miles, having extended their former limits by dispossessing the Yaffaies of Abien some thirty years ago. For many years after the occupation of Aden they caused an immense deal of annoyance under a troublesome old Chief, Sultan Ahmed, by plundering the kafilas on the road, and so preventing supplies from being brought into Aden; but since their late chastisement they have settled down into peaceful and orderly neighbours, and under Sultan Haidera, who has now succeeded his father, are rapidly increasing in wealth and prosperity, and are now among our best friends.

The Fudhli tribe is very numerously subdivided, and may be considered in three sections—the Merkashi, the Ellah Bedouins, and the clan occupying Abien and the low ground: these are the Nakhai, Masaadee, Saeedee, Ahl Saeed, Ahl Shedad, and Ahl Haidera Munsoor. Some of them, however, are merely nominal, and only contain a few families. They may number 5,000 people.

The Ellah Bedouins comprise nine clans, viz. the Elahi, Hasein, Jaadnee, Maisree, Arooli, Fatahanee, Hatamee, Hanashee, and Ahl Sheneen. They are by far the most numerous section, amounting perhaps to 9,000, and inhabit the hilly portion of the territory and Dathina, which is a dependency of the Fudhlis but pays tribute to the Sultan of Nisab. The Merakash, like the Gūmmūsh and Deaybees, are of Himyar descent, and are identical with them in customs and character; they hold the eastern part adjoining the Owlaki. The loose morality of their women is notorious, though considerable laxity exists among all the tribes in these parts, the sale of wives even being a practice not entirely unknown to them. The Merakash number about 3,000 individuals, making the total strength of the tribe about 16,000 or 17,000 souls. Many of the clans of these tribes, it will be observed, derive their names from women. This is a common practice, and it is not unusual for men, too, to take the mother's name, instead of the father's, as a surname—for instance, Abdulla bin Fatima.

The country produces no coffee, but the hills abound with myrrh trees, the gum of which is gathered by Somalees; and in the low alluvial plain of Abien the Fudhlis possess one of the most fertile districts in S. Yemen, which would be very productive if properly irrigated.

The soil is a sandy loam. It is watered by two Wadies, the Hassan and the Bunna, both branches of one source, rising in the hills to the north-west; they were both flowing when we passed, the Bunna being about 400 yards broad and running over knee-deep.

The sea is bordered by a thick forest of acacias, and beyond, toward the hills, are broad fields of grass and corn stretching away to the Yaffai valley. The uncultivated parts are either sandy patches, or are covered with brushwood and thick jungle. The jowaree grows to a great height, considerably overtopping the head of a man on a camel.

The name Abien is commonly applied to the whole extent of country held by the Fudhlis, but they themselves, and it appears correctly, understand by it only the strip of plain lying between the Yaffai hills and the sea, and containing perhaps 200 square miles. It produces jowaree, bajree, wheat, barley, sesamum, and cotton.

The land is all owned by the Sultan, and there are no freehold proprietors; the tenant generally has to pay half the proceeds to the Sultan.

In the neighbouring country of Lahej the land is in the hands of private holders, but it is being gradually bought up by the Sultan. Ambergris is sometimes found on this coast; it is highly prized, and is a monopoly of the Sultan. I believe there are no manufactures carried on among this tribe. The chief towns are Sureea, Shugra, Assala, Khor, Jowala, Khamila, Teran, and Amodea. Sureea is a small town securely situated in a ravine of Jebel Arees, which rises about 3,000 feet behind; its elevation is 700 feet above the sea, from which it lies distant five miles; the ground between is stony and furrowed by nullahs. Near the town is Dar-el-Harz, a quaint old grey tower, the chief stronghold of the Fudhli Sultans.

Mr. Munzinger's Report.

1.

Object.

I would not have ventured on a geographical outline of the triangle between Ain, Habban, and Howr if Arabia were as well known as it is interesting; but

so little real information is to be found in the travellers that any new addition cannot but be welcome.

I am well aware that all I am going to say will only prove our shortcomings; but I hope that the knowledge of all we could not look after will induce other better men to go in for it. We were allowed to travel through the country and to see as much of it as would a traveller by railway; all we got was a general impression, and that I am going to give a sketchy account of.

2.

Geographical division in two regions:—
I. Sand and lime region.
II. Metamorphic region.

In the triangle lying in our track and the country round it two distinct geological, and so geographical, regions presented themselves to us, which I may begin to call, from their principal rocks, the sand and lime region (I.), and the metamorphic region (II.) When we will have explained this denomination, everything in the country—vegetation, animal and human life—will be found to be determined by it.

The sand and lime region has its west frontier near Habban, and runs in a S.E. direction; the metamorphic region leans against it from W., and extends S.E. and S.W., its waters falling principally northwards. I am not certain about the Diabi or Himyar Hills, they look from the N. side like sand and limestone; but fragments in the watercourses, and the knowledge that they are woody, make me believe that their principal character is metamorphic, girded only by the high hill-range over Maifa.

3.

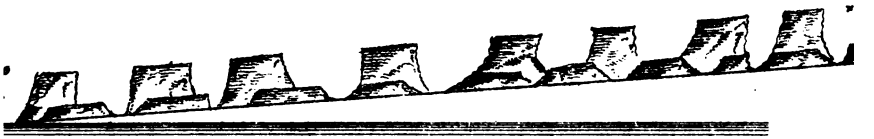
Geographical and geological appearance of the two sions.

The geographical and geological appearance of the two regions is very distinct.

I. Sand and lime region.
II. The hills.

The sand and lime region presents a rising plane, nearly filled up with a double range of hills, the former consisting of inaccessible blocks or ambas, 1,500 to 2,000 feet high, and the latter of 300 to 500 feet high hillocks, more torn up and accessible. The plain itself has a slope of 1 : 80 (on

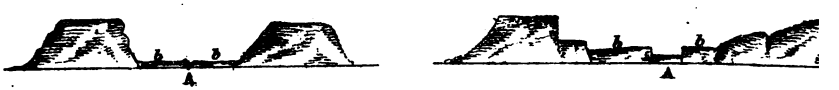
the line from Ayn to Habban). The whole region would present the following aspect, minor irregularities not accounted for :—



These hills have nearly all the same elevation above their oblique base; they cover nearly eight-tenths of all the space, without forming a great continual ridge or mountainous country. They have, so far only of course, some analogy with the E. Jura.

But as these hills, by their rocky character and their inaccessibility, exclude any idea of vegetation or animal life, they influence the country only by their sending water, sand, and lime down to the plain, and disturbing its surface by it. There is, then, only left for consideration the rising plane, which is represented by large watercourses or "Nullas," with alluvial stripes along its banks, narrowed by the lower, and sometimes even by the higher hill-range.

2. The plane ("Nullas").



A. *Wad* (*Nulla*). b. *Alluvium.*

The rock we observed in this region was sandstone, lime, clay, and conglomerate. We brought back some specimens: the strata are nearly horizontal: the rock is in a state of speedy and ever-active decomposition, which lends the hills very extraordinary tower-like forms. The water working on the barren, friable sandstone carries away piece after piece; it has much less power on the lower hills, which consist of conglomerate and strong red and yellow clay.

4. Decay of the hills.

Note No. I.—It may not be useless to consider the consequences of the decomposition. The lime and sand hills, worn out, break down; the sand produced by the fragments forms at their base an oblique

plane, carried away by wind and water, and forming the "downs" or "kaud" we found between Ayn and Maifa. On the north declivity of the sand and lime region it is carried down to the sand sea, or Bahr-el-safi. This decay seems not to influence much the features of the alluvial soil and of the Wad, these being protected by the stronger lower hill-range; and in fact the ruins of Nageb-el-Hajer, which are certainly 1,500 years old, show by their situation that since then no great change has come over the country.

Another question would present itself here, viz. have the sand and lime hills formed of old one big stock of rock, washed out in a very long period? The corresponding heights of the hills would contend for it, but we know not enough to answer this interesting problem.

4

II. Metamorphic region.
1. Its general character.

The metamorphic region presents a quite different aspect and character; it consists of a disorderly agglomeration of hills, all connected together, and forms a mountainous country (not plateau), seldom interrupted by disconnected plains and narrow "Nullas." The form of the hills is round or conical, with rather soft lines, allowing trees and grass to grow, and favouring animal life.

2. Its sort.

The rock is gneiss, slate, quartz; it shows often extraordinary pressure by its curved strata, as —

The stratification is rarely horizontal, but generally in great angles and lying pell-mell.

3. Pressure of sand and lime hills in it.

A curious feature of this region is that now and then isolated sand and lime hills, easy to be known far off, look out of the metamorphic hill-land like islands out of the sea, quite a protest against metamorphosis.

The metamorphic region would present the following aspect: —

Metamorphic Hills.

5.

The water-courses.

Let us now examine the relation of the water-courses to the surface, as we found it until now.

The map shows that from the metamorphic or Owlaki stock all the "Nullas" (Wadis) of this country rise; from it also comes all the alluvial soil fertilizing the sand and lime region. We find as principal Nullas—

1. Wadi Maifa, direction S.E.
2. Wadi Howr, direction S.W.
3. Wadi Nicab, direction N.E.

As far as we know, all three rise close out of the same stock.

We hear that the principal waters of Dethina go in a S.W. direction to Abyen (Fudhli land), and it is very probable that the district of Dethina is only a dependence or lower range of the Owlaki stock.

All these Nullas have in an inverse sense (north exchanged against south) some analogy with their most noble brethren of Central Europe; the Alps corresponding to the Owlaki Alps, the Wahedi lime and sand hills to the Jura, the German lowland to the Gulf of Aden, and the N. sand sea to the Mediterranean. We would compare the W. Maifa to the Aar, W. Howr to the Inn, W. Nicab to the Rhone.

Character of them.

We have not much to say about the character of these watercourses, or "Nullas" (to adopt the Indian word). In the sand and lime region they are large and smooth, carrying sand and alluvial soil with a slow fall, and digging out their bed through the sandhills. In the metamorphic region ravines or crevices were evidently formed the best metamorphosis, filled up and levelled by the water carrying sand and boulders; it profits of the

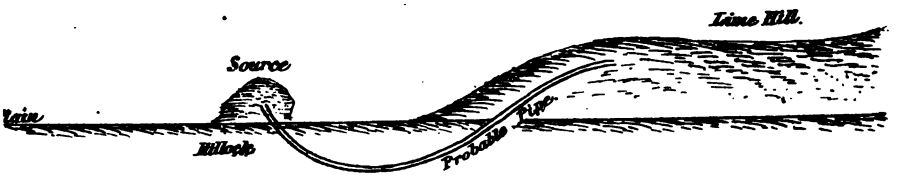
ways plutorial action has broken through. The Nullas are in consequence rather narrow, have much winding, and work little on their solid slaty banks.

About water generally.

Water in both regions lies generally 50′ to 100′ under the sand bed, but it is found in large quantity; running water is only found where overlying rocks or cataracts force it up to the surface.

Water in the sand and lime region is generally bad and has a magnesia taste about it; in the metamorphic region it is rather brackish, quite analogous to the waters in the Soho and Habab torrents.

An extraordinary exception to these general rules are the, so to say, artesian sources of Ayn and Sohail, &c., where out of a sandy plain lying near limestone hills rise very small 50 feet high hillocks without any level sources.



As these hillocks are too small to explain the presence of a strong source, we can only suppose that it comes from the neighbouring hills by means of natural pipes.

6.

About the country out of our triangle by induction and information.

It will be now time to make some observations about the country out of our track round the triangle we went over, profiting of native intelligence, and of induction from the seen to the unseen. But I give the results with much reluctance, because experience shows that natives may give distances and names, but have no geographical instinct; a proof of it is Colonel Chesney's Map of Arabia.

Country N. of the Owlaki Hills.

We heard, then, that N. of Owlaki stock large fertile plains extend, the waters running N.E., and Nicab being the centre.

Country N. of Wadi Doan sand sea.

We heard further, and Wrede's account corroborates the statement, that N. of Wadi Doan lies the famous Bahr-el-Safi, or sand sea, *i.e.* a very low basin filled up with loose sand.

By induction, from our own experience, these statements merit full belief, and we would try to explain them in the following way :—

How to be explained.

We suppose N. of all this country a basin, or large crevice, extending from long Nicab, about very far E. having a great depth, sea level or more. This basin has been filled up on the W. side by alluvium from the metamorphic rock, creating the large Nicab plains, whilst N. and N..E. of Habban and Wadi Doan, which belong all to the same sand and lime region, the decay of the rocks on the N. declivity filled the E. side of the basin with sand only. I suppose the Nicab alluvial plains and the sand sea to be connected—the latter receiving the water of the former—and a continual fight to go on between the vivifying influence of alluvial sand from the Owlaki stock and the overbearing inlet of dead loose sand from the Wahedi Ambas.

If I have hazarded myself in such hypothesis, I have done it only to excite more research. A journey from Aden to Mareb, and thence to Mekalla, would settle all S. Arabian watersheds.

7.

What appearance this country ought to have in a map.

From what we have said already it is evident that the general appearance of all this country is exceedingly dry. If we took the best time of the year—*i. e.* when all country is under cultivation, in September or October, which would be only fair—a map ought to be coloured in the following manner to give a true idea of what the country is :—

(1.) The "Wadis" or "Nullas" all in yellow (the water being subterranean) with the exception of short blue threads, as Redê-ha and down the Monga torrent.

(2.) The sand and lime hills grey or yellow, being destitute of all vegetation in *any* season.

(3.) Over the "Nullas" some green spots, indicating the alluvial oases being under cultivation ; as part of Maifa, Hauta, river down it, Lehe, Habban, Khabr, Monga, &c.

(4) Owlaki Hills in clear green, enjoying some vegetation.

I may mention, by the way, that it is a great mistake of our map-makers to colour African and Arabian "Nullas" in blue, as if they were rivers full of water; running waters occur, but are never low.

8

Comparison to Abyssinia.

The general appearance of the country I am describing is in many ways very similar to that of different parts of Abyssinia, and I looked of course anxiously out for possible analogies, but I found no real uniform identity.

The sand and lime hills of the Wahedi look very like the little ambas near Debra Dammoo and generally of Tigré—the same table-land with perpendicular walls, the same speedy decay. But in Abyssinia the table-lands are connected between themselves; they are accessible and large enough to keep water and vegetation, and to constitute so the real wealth of the country; the valleys also between them are much larger and more fertile: in short, the Arab table-hills are quite a miniature of Abyssinia in every respect.

The Owlaki hill-land has some likeness to parts of Habab and Shoho country in rock, trees, and appearance; the Howr torrent is a photograph of the Hibka or Haddas.

The Arabian coast is certainly much superior to the African, or, rather, Abyssinian coast, by the simple reason that great part of the highland slopes down to it and sends to it its waters, forming large alluvial plains with important settlements; as Howr, Abyen, Lahej, &c. Its climate is also rendered much cooler by the open sea-breeze.

The African coast receives also some large "Nullas," but some of them have no remote rise; others are lost in the salt plains; the rest have, thanks to the light soil, too high banks to be available for irrigation. The advantage is to all for the Arab coast.

9

Effects of the geographical condition of the country on nature and man.

From the geographical condition of the country, as we have found it, it will be quite easy now to infer the necessary effects it must have on nature and man.

We have already observed that in the sand and lime region the hills can absolutely bear no tree, no grass, no animal; only the "Wadis" are approachable to life, and even then vegetation is only possible when there is a little room left between hill and torrent to be covered by alluvium.

1. In the sand and lime region.

On these rare spots is concentrated human industry. Where we see vegetation, it is produced by culture: there is, of course, a general absence of cattle.

The settlements then occupy the narrow alluvial strips over the "Wadis," out of which man strives to get his livelihood by careful tillage and manuring, and by watering from torrent and well: hence the large but dense colonies of Maifa, Hauta, Habban, &c., oases in a true desert.

The condition of the metamorphic region is quite different,—its accessible, connected, undulated, clayish ground favours vegetation and animal life. We find in consequence more grass, many trees, wild animals; but I must confess that even here vegetation bears no comparison to similar countries in Africa. Nature is exceedingly sober, but very grateful to stirring-up labour; a lucky circumstance, I think, preventing the Arabs from sinking in the indolence of the Abyssinians.

2. In the metamorphic region.

A further necessary consequence of this condition is, that this metamorphic region is not destitute of cattle (camels and goats, no cows, there being more trees than grass). Some fixed settlements are to be found in the rare plains, but the greater part of the inhabitants live with and on their cattle. I suppose the population of this region to be less than that of the sand and lime region; but it is better distributed, there is more life all over, much wilderness and wildness in land and man, but no death.

10

Political and economical life is necessarily also fixed by the same natural influences. We find land, independent settlements in one region with husbandry only; smaller but tribe-like ones of cattle-breeders, and less cultured, in the other.

Effects of nature on political and economical life.

We find no nomads: the character of the country, being void of large grassy or woody plains, forbids it. We find general poverty, but equality of fortune; and so of power. Scarcity of room forces man to utilize every inch of it, to ameliorate it, and to increase his income by industry; he is even obliged to spare room to build very high houses. The friable rock being bad material leads to the employment of bricks, for which there is abundant first-rate clay. The absence of wood and iron forbids the arts of carpenter and smith. We find no "meubles." Even in the Sultan's house people sleep on the ground.

The products of the country are the same as in Abyssinia at equal elevation, plus dates (all kinds of jowari, barley, wheat, thif, &c.). The coffee plantations occur more to the east on the great chain running parallel to the Red Sea; but I don't know why it could not be grown here, too, if they watered it as they watered common grain. The same observation applies, *à plus forte* reason, to cotton. Indigo is grown, but not to a great extent. In the metamorphic region we saw plenty of myrrh trees; frankincense, we heard, occurs in the Himyar Hills, but it is scarcely known by the Arabs.

The great disproportion between cultivable soil and dead sandstone will never permit a great increase of population; and I suppose that in old times things have not been much better, the only large ruins we found being those of Maifa. However, I believe that the Government of those days, as it had more authority, did more to keep the torrents within the dams.

Trade is necessarily restrained to strict necessity; its routes, the torrents of Maifa and Howr, are indicated by nature.

I may conclude this chapter by observing that the geographical and political boundaries coincide; the Wahedis hold the sand and lime region; the Owlaki the metamorphic hill-land and its northern slope. The old Himyarites (the Deaybi, Gúmmúsh, &c.) live where the two regions join, and, meeting together, form a large hill-barrier against the sea. It is curious to find these aborigines driven away from the cultivable ground, where we learn that they enjoy even now more rational spirit and unity than the Arabs. An exact study of these tribes would be most grateful to the ethnographer.

11

Aden and Arabia.

It is now thirty years that Aden is the Gibraltar of Arabia, and I am sorry to say that the first pioneers coming to reconnoitre all over—poor Haines, Cruttenden, Wellsted, of whom we could not speak with too much respect—knew better about Arabia than the British officer knows to-day.

There is no doubt that Government policy, looking at Aden as a purely military place and coal depôt, and not as an emporium, made it desirable to have as little as possible to do with the interior.

But as neighbours are always neighbours, even were a channel or an isthmus dividing them, practice has not strictly followed theory. Want of provisions, and even of water, forced the different Residents to provide for the safety of supply convoys. But as Government, from dread of conquest, wished not to enforce this point, they made the so-styled Sultans round Aden their pensioners, with the duty of keeping the roads open.

It is not here the place to inquire how this system works and succeeds; at all events, I have no doubt that it has not a nice moral effect on the Arabs, for whom meek ways are always weak ways. A little fighting, I believe, would, after all, have been cheaper and more honourable; proof thereof is Sir W. Merewether's expedition against the Fudhlis, which did more for lasting friendship and peace than all the rupees thrown away these thirty years.

Necessarily, the same cautiousness made it undesirable that British officers went inland; they might be captured or even killed, and then Government could not say, I care not.

The consequence is, that the country 50 miles round Aden is nearly a *terra incognita;* that 100 miles off even on the coast an Englishman is looked upon with a most comical surprise, as if he came from Kamschatka or were a new species; that he is not very safe, and obliged to buy his way through; that at Habban nobody knows anything about Aden except the wealth and liberality of its treasure. All this is as true for Somali-land and all the country round the Gulf, of which Aden seems to be the mistress.

I am far from condemning cautiousness, but respectability goes above it. Besides, I cannot help thinking that even the most cautious Govern-

ment ought to know more about its neighbours; the *imprévu* plays a great part in history, and may bring on one day an Arab Expedition. Knowledge, in fine, is never lost. On the other side, a Government who makes treaties with natives ought to know, at least, where and who they are. I think, too, to conclude, that when the Aden Residency spends lacs on forts which are not always *très réussi*, it could well spend some little money on the exploration of Arabia and Somaliland.

There would be a way to combine sanitary, military, political, and geographical views, and to satisfy them all. The summer months in Aden are dreadful: we know not what is worse, heat or dust. Let them march every year half the garrison out for three months, and make a promenade in the hills, with no other object than to get in a cool country and give exercise to the soldiers, paying for everything, demanding nothing but full respect. Once to Taez, once to the coffee-hills of Yaffe, another year to Nisab, and so on. The troops would enjoy it exceedingly; the expense would not be immoderate; and need not tell what impression such a peaceful but powerful march through this virgin soil would produce on the simple but logical children of Ishmael and Hazramawit!

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ART. VIII.—*Memorandum on the Tribal Divisions in the Principality of 'Omân, with a Map showing the general Distribution of the Tribes, and a Table showing the Genealogy of the Ruling Dynasty of Muscat, by* Lieut.-Colonel E. C. Ross, Political Agent at Muscat.—*Contributed by Government.*

The classification of the Arabian tribes or clans inhabiting 'Omân into two great divisions, "Hinâwî" and "Ghâfirî," is peculiar to that kingdom, and has been adopted in comparatively recent times. The modern history of 'Omân being mainly the narrative of the contentions between these great rival factions, a precise understanding of their mutual relations and the origin of their differences is desirable.

With a view to a clear explanation of these points it is necessary to refer back to the older and better-known tribal classifications.

Arabian historians have divided all the tribes of Arabia into three primary classes:—

1*st*—El 'Arab el 'Arabeh, *i.e.* pure Arabs, those created speaking Arabic.

2*nd*—El 'Arab el 'Mota'arribeh, or genuine Arabs, those who acquired the Arabic language,

3*rd*—El 'Arab el Mosta'arribeh, or the naturalized Arabs.

Of these three classes the first is considered to be lost or extinct, and there remain the classes known to Europeans as genuine Arabs and naturalized Arabs.

The former consists of those descendants of Kahtân (or Joktan of Scripture), many of whom settled in Yemen, and they are also termed Kahtânite or Yemenite Arabs.

The naturalized Arabs are said to be descended from Ishmael, but do not trace pedigree further back than 'Adnan.

This class is termed Ishmaelite, 'Adnanite, or Ma'addite, and also Nizârite, from Nizâr bin Ma'add.

The first Arab settlers in 'Omân came from Yemen, and were Kahtânite. Later immigrants arrived from the westward, and were mostly tribes of the Ishmaelite branch.

The terms, however, by which these rival branches were distinguished in 'Omân were "Yemenîyeh" and "Nizârîyeh"; and these terms continued to be employed up to the beginning of the 18th century.

At that epoch civil wars occurred between the Yemenîyeh and Nizârîyeh, in which the tribe Beni Hinâh, under their leader Khalf bin Mubârik, on the one side, and the tribe Beni Ghâfir, under Mahommed bin Nâsir, on the other, took prominent part. Owing to the ability and reputation of these leaders, it happened that the Yemen tribes ranged themselves under Khalf the Hinâwî, and the Nizârîyeh under Mahommed the Ghâfirî.

This circumstance led to the adoption of the terms "Hinâwî" and "Ghâfirî" in their present extended sense, in supersession of the older and more correct nomenclature.

The term Hinâwî, therefore, as now applied, may be said to correspond with Yemenîyeh or Kahtânite, and Ghâfirî with Nizârîyeh, Ma'addic, or Ishmaelite, with this modification, however, that, since the period of the adoption of the present party-names, certain tribes have, from political causes, changed their denomination, Hinâwîs becoming Ghâfirîs, and *vice versâ*.

From the supersession of the old system of classification it has resulted—firstly, that the tribes are ranged in political parties; and secondly, that the original genetical lines of demarcation are in course of being effaced.

It would undoubtedly be possible still to classify the various clans according to the older systems, but for practical official purposes the division into "Hinâwî" and "Ghâfirî" must be adhered to.

There can be no doubt that this is an instance where the assumption of a name or party-cry has to a considerable extent influenced the course of historical events.

At the present time a prince of a Yemen house is supported in power by the descendants of the settlers from Nejd.

A reference to the table of tribes will show that the majority of the Hinâwîs follow the Ibâdhi sect, whilst the opposite faction are mostly orthodox.

This religious distinction was in older times more general and marked, but it is one which has powerfully affected the political condition and government of 'Omân.

In some provinces the tribes of either division have usually recognized one Chief as the head of the faction generally, and the person so recognized is termed Temîmet.

For instance, in the province of Dhâhireh the Chief of the Beni Ghâfir is styled Temîmet-el-Ghâfirîyeh, and looked upon as a sort of referee in matters affecting the general interests of the Ghâfirîs.

The Hinâwîs of 'Omân have been usually accustomed to respect the reigning Seyyid of the Al-bû-Sa'eed as their Temîmet.

The above remarks are intended to supplement a table which has been prepared of the principal tribes; perhaps they may also help to elucidate the somewhat complicated question of the growth and mutual relations of the rival parties in the state of 'Omân.

PRINCIPAL TRIBES

Hinâwî

Names of Tribes. Adjective Form.	Names of Tribes. Collective Plural Form.	Religious Sect.	Province.
Adîyî	Beni-'Adî	Ibâdhî	El-Hajar
'Alawî	Beni-'Alî	,,	Dhâhireh
'Alawî	Beni-'Alî	,,	Bâṭineh
'Âmerî	El-'Awâmer	,,	'Omân
'Arâbî	Beni-'Arâbeh	,,	'Omân
Bârihî	El-Bawârih	Sunnî	Bâṭineh
Baṭṭâshî	Beni-Baṭṭâsh	Ibâdhi	'Omân
Bedû-î	El-Bedû-ât	Sunnî	El-Hajar
Bereykî	Yâl-Bereyk	Sunnî & Ibâdhî	Baṭineh
Dahmanî	Ed-Dahâmineh	Sunnî	El-Hajar
Dhâhirî	Edh-Dhowâhir	,,	Dhâhireh
Fezârî	El-Fezâreh	,,	Bâṭineh
Ghâfilî	El-Ghâfeylât	Ibâdhî	Bâṭineh
Ghâribî	El-Ghawârib	,,	Bâṭineh
Ḥabsî	El-Ḥabûs	,,	Sharḳîyeh
Hamadî	Yâl-Ḥamaḍ	,,	Bâṭineh
Ḥâjerî	El-Ḥawâjer	,,	Sharḳîyeh
Hammâdî	Beni-Ḥammâd	Sunnî	Bâṭineh
Ḥâdî	El-Ḥâdî-în	Ibâdhî	Sharḳîyeh
Ḥârithî	El-Ḥarth	,,	Sharḳîyeh
Ḥaṣanî	Beni-bû-Ḥaṣan	,,	Sharḳîyeh
Ḥaṣanî	Beni Ḥaṣan	,,	El-ḥajar
Ḥeddâbî	El-Ḥeddâdebeh	,,	'Omân
Do.	Do.	,,	Bâṭineh
Ḥejerî	El-Ḥejrî-în	,,	Sharḳîyeh
Ḥeydî	El-Ḥûyûd	,,	Bâṭineh
Ḥiná-î	Beni-Ḥinâh	,,	'Omân
Hindasî	El-Hinâdis	,,	Bâṭineh
Howsanî	El-Ḥowâsineh	,,	Bâṭineh
Jahdhamî	El-Jahâdhim	,,	Sharḳîyeh
Jerrâdî	Yâl-Jerrâd	,,	Bâṭineh

OF 'OMAN.

Division.

Villages or Districts.	Number of Males.	REMARKS.
Rostâk. Howkein	200	
Yankal	1,000	At feud with Beni-Ghâfir.
Wâdî 'Ahin	500	
El-Falaj. El-Karyatein. Hameydhein. El-Kal'ah.	2,000	At feud with the Jenebeh.
Es-Sabal	1,000	At feud with the Siâbi-în.
El-'Otheybeh	300	
El-Mazâra'	2,000	At feud with the Siâbi-în.
Wâdî-Hattâ	250	
Shirs. Kasbîyet-yâl-Bereyk. Ed-Deyl.	220	
Wâdî-el-Kowr	200	Ishmaelite.
El-'Ein. El-Mo'teridh	1,000	At feud with the Na'îm.
Makheylif	70	
Bû-'Abâlî	50	
Bû-'Abâlî	50	
El-Madheybi. Er-Rowdhah. Wâdî-'Andâm.	5,000	
El-Gharîfeh	200	
Sûr. Jenâh	500	
Sûr-Hîyân	500	
Wâdî-'Andâm	500	
El-Kâbil. Ed-Derîz. Ibrâ	2,000	At feud with the Mesâkereh.
Ja'lân	2,000	At feud with the Beni-bû-'Ali.
Rû-î, Wâdî-bûsher. El-Habûbîah.	1,500	
El-Khowdh. Fanjah. Bidbid.	1,000	At feud with the Siâbi-în.
Shirs	150	
El-Bidîyeh	3,000	
Dhîyân	300	
Beled-Seyt. Wâdî-'Alâ. El-Khowdh. Fanjah. Bidbid.	3,000	The term Hinâwî, now applied to the whole Division, derived from this family. They have a feud with the 'Ibri-în.
El-Ghalîl	400	
Wâdî-el-Howâsineh. El-gheyzein. El-Khâbûreh.	2,400	At feud with the Beni 'Omar.
Semed	300	
Abû-Mahhar. Marâghah. El-Jerîd.	500	

Hinâwî

Names of Tribes. Adjective Form.	Names of Tribes. Collective Plural Form.	Religious Sect.	Province.
Kareynî	Yâl-bû-Kareyn	Ibâdhî	Bâṭineh
Kareyṭibî	El-Karâṭîb	Sunnî	Bâṭineh
Kaṭeyṭî	El-Kaṭeyṭ	,,	Bâṭineh
Khâlidî	Beni-Khâlid	,,	Bâṭineh
Khamîsî	Yâl-Khamîs	Ibâdhî	Bâṭineh
Majeynî	El-Majânîyeh	Sunnî	Bâṭineh
Mâlkhî	El-Mawâlikh	,,	Sharḳîyeh
Manderî	El-Manâdereh	Ibâdhî	El-Ḥajar
Manwarî	El-Manâwareh	,,	Bâṭineh
Marzûkî	El-Marâzîk	Sunnî	Bâṭineh
Masheyfirî	El-Mashâfîreh	Ibâdhî	Bâṭineh
Mashrafî	El-Mashârifeh	,,	Sharḳîyeh
Ma'walî	El-Ma'âwal	,,	Bâṭineh
Nowfilî	En-Nowâfil	,,	Bâṭineh
Rasheydî	Yâl-bû-Rasheyd	,,	Bâṭineh
Reddeynî	Er-Reddînât	Sunnî	Bâṭineh
Rûeyhî	Beni-Rûâheh	Ibâdhî	'Omân
Sa'adî	Yâl-Sa'ad	,,	Bâṭineh
Sa'îdî	Âl-bû-Sa'îd	,,	Sharḳîyeh
Do.	Do.	,,	'Omân
Do.	Do.	,,	Bâṭineh
Sâlehî	Es-Sawâleh	,,	Bâṭineh
Selâmî	Al-Abd-es-Selâm	Sunnî	Bâṭineh
Serîrî	Es-Serîri-în	Ibâdhî	El-Ḥajar
Ṣowwâfî	Eṣ-Ṣûâwafeh	,,	Dhâhireh
Shemsî	Esh-Shemûs	Sunnî	Bâṭineh
Shîâdî	Esh-Shîâdi-în	,,	Bâṭineh
Wahîbî	Âl-Wahîbeh	Ibâdhî	Sharḳîyeh
Do.	Do.	,,	Bâṭineh
Wahîbî	Beni-Wahîb	,,	El-Ḥajar

—continued.

Villages or Districts.	Number of Males.	REMARKS.
El-Hajeyreh. Dhiyan	800	
Khor-el-Milh	40	
El-Bereyk	150	
Umm-et-Teyfeh	400	
El-Khabbeh. Sha'ibeh	1,000	
Wadâm	200	
Râs-el-Hadd	800	
Es-Seleyf.....	50	Ishmaelite. At feud with the Sûâwafah.
El-Hadhîb	300	
Ṣûr-Hîyân. Khor-el-Hamâm.	600	Ishmaelite.
El-Manfash	1,500	
Er-Rafsah	300	
El-Khabbeh. Wâdî-el-Ma'âwal.	3,000	At feud with people of Nakhl.
Sha'ibeh. Wadâm. Majiz-en-Mowâfil.	450	
El-Khadhreh	1,000	
El 'Abbâseh.....	50	
Wâdî-beni-Rûâheh	2,500	Ishmaelite. At feud with the Beni-Jâber and Beni-Rîyâm.
Bû-'Abâlî. El-Mallâleh. El-Kart. Tharmad. Bat-hâ. Er-Rakkâs. El-Khadhreh	10,000	
Semed	300	Family of the reigning Seyyids. Derive from the Azd.
Mahyûl. Falaj. Abû-Nakhîleh. 'Azz. Nanh. Âdam. Nezwâ.	3,500	Do. do. do.
Kasbîyet-âl-bû-Sa'îd	200	Do. do. do.
El-Suweyk	400	
Ed-Deyl	50	
Nakhl	100	
Es-Seleyf.....	50	Ishmaelite. At feud with the Manâdereh.
Khor-el-Hamâm	100	
Ṣûr-esh-Shîâdî-în	70	
El-Jâzer. Sedeyreh. Senow. Wâdî 'Andâm	5,000	Bedouins.
Majiz-âl-Wahîbeh	70	
Rû-i. Wâdî-Bûsher. El-Habûbîah.	1,500	

Hinâwi

Names of Tribes. Adjective Form.	Names of Tribes. Collective Plural Form.	Religious Sect.	Province.
Werdî	El-Werûd	Ibâdhî	Sharkîyeh
Washâhî	El-Wahashât	Sunnî	El-Hajar
Yemenî	El-Yemen	Ibâdhî	'Omân
Za'âbî	Ez-Zû'âb	Sunnî	Bâtineh
Zekawî	Ez-Zekâwineh	Abâdhî	Sharkîyeh

Ghâfirî

'Alawî	Beni-bû-'Alî	Wahhâbî	Sharkîyeh
Bidâî	El-Bidâ	Sunnî	Dhâhireh
Der'î	Ed-Derû'	Ibâdhî	'Omân
Do.	Do.	Sunnî	Dhâhireh
Ghâfirî	Beni-Ghâfir	Sunnî & Ibâdhî	Dhâhireh
Do.	Do.	Ibâdhî	El-Hajar
Harrâsî	Beni-Harrâs	„	El-Hajar
Hâshimî	El-Hishm	Sunnî & Ibâdhî	Sharkîyeh
Hikmânî	El-Hikmân	Sunnî	Sharkîyeh
'Ibrî	El-'Ibrî-în	Ibâdhî	'Omân
Do.	Do.	Sunnî	Dhâhireh
'Îsâ-î	Beni 'Isâ	Ibâdhî	El-Hajar
Jâberî	Beni-Jâber	„	Sharkîyeh
Do.	Do.	„	El-Hajar
Jeneybî	El-Jenebeh	Sunnî	Sharkîyeh
Do.	Do.	„	'Omân
Do.	Do.	„	Bâtineh
Ka'bî	Beni-Ka'b	„	El-Jow
Do.	Do.	„	El-Hajar
Kundî	El-Kunûd	Ibâdhî	'Omân
Kateybî	Beni-Katab	Sunnî	Dhâhireh
Kelbânî	Beni-Kelbân	Sunnî & Ibâdhî	Dhâhireh
Kharûsî	Beni-Kharûs	Ibâdhî	El-Hajar

Division—continued.

Villages or Districts.	Number of Males.	REMARKS.
Wâdî 'Andâm	300	Ishmaelite.
Wâdî-Hattâ	250	At feud with Nizâr.
Zikki or Izki	1,250	
Kasbîyet-ez-Zû'âb. Er-Rûeyleh. Elkhashdah.	400	
Semed	300	

Division.

Ja'lân. Ṣûr	1,500	At feud with Beni-bû-Hasan.
Dût	100	Kahtânite. At feud with the Beni-Ghâfir.
Bedouin or Nomadic	1,500	
Ten'am	2,000	
El-Ghabbî. El-'Einein. Ed-Derîz. El-'Âridh.	900	At feud with the Beni-'Ali; the Ya'âkîb, and Beni-Kelbân. This tribe gave the name to the Ghâfirî party, previously the Nizârîyeh.
Wâdî-Beni. Ghâfir	500	
Nakhl	3,000	
Et-Tehwah. El-Hameydheh.	800	At feud with the Hejri-în.
Bedouin	800	
El-Homrâ	1,500	At feud with the Beni-Hinâh.
El-'Orakî	50	
Wâdî 'Âhin	500	At feud with the Beni-'Ali.
Kalhât. Teywî. Dhibâb and Hills.	4,000	At feud with the Beni-Rû-âheh.
Seyjeh. El-Jeyleh. Et-Tow.	2,500	Do. do.
Bedouins of desert from Jâzer west. Ṣûr.	5,000	Kahtânite. At feud with the Al-Wahîbeh.
Bedouins	300	
El Khadhreh	100	
El Mahdhah	2,000	At feud with the Beni-Mezrû'.
Wâdi-el-Kowr	200	
Nezwâ	1,500	At feud with the people of Nezwâ.
El-Aflâj	200	„ „ the Beni-Mezrû'.
El-Makannîyât	1,000	„ „ the Beni-Ghâfir.
Rostâk. Nakhl	300	

Ghâfirî

Names of Tribes. Adjective Form.	Names of Tribes. Collective Plural Form.	Religious Sect.	Province.
Khazeyrî	Beni-Khazeyr	Ibâdhî	El-Hajar
Koleybî	Beni-Koleyb	Sunnî	El-Hajar
Mahârabî	Beni-Mahâreb	Ibâdhî	El-Hajar
Makbâlî	El-Makâbîl	Sunnî	El-Hajar
Makheyrekî	El-Makhârek	Ibâdhî	'Omân
Mejlebî	Beni-Mejleb	„	'Omân
Meskerî	El-Mesâkereh	„	Sharkîyeh
Mezrû'î	Beni-Mezrû'	„	El-Hajar
Nadâbî	En-Nadâbî-în	„	El-Hajar
Na'îmî	En-Na'îm	Sunnî	Dhâhireh
Do.	Do.	„	El-Jow
Nebhânî	Beni-Nebhân	Ibâdhî	El-Hajar
Nizârî	En-Nizar	„	'Omân
Omarî	Beni-'Omar	Sunnî	Dhâhireh
Do.	Do.	Ibâdhî	El-Hajar
Do.	Do.	„	Bâtineh
Râ-îsî	Er-Rîâyeseh	Sunnî	El-Hajar
Râsîbî	Beni-Râsib	„	Sharkîyeh
Rehbî	Er-Rehbî-în	Ibâdhî	El-Hajar
Rîyâmî	Beni-Rîyâm	„	'Omân
Sa'adî	Beni-Sa'adah	Sunnî	Dhâhireh
Shakeylî	Beni-Shakeyl	Ibâdhî	'Omân
Do.	Do.	„	Dhâhireh
Sharkî	Esh-Sharkî-în	Sunnî	El-Hajar
Sîâbî	Es-Sîâbî-în	Ibâhdî	El-Hajar
Sinânî	Beni-Sinân	Sunnî	Sharkîyeh
Subhî	Beni-Subh	„	El-Hajar
Ya'kûbî	El-Ya'âkîb	„	Dhâhireh
Ya'rabî	El-Ya'ârabeh	Ibâdhî	El-Hajar
Zîdî	Beni-Zîd	Ibâdhî & Sunnî	Dhâhireh

***Division*—continued.**

Villages or Districts.	Number of Males.	REMARKS.
Nakhl	200	
Wâdî-el-Jezzi	1,000	
Wâdî-Semâîl	100	
Near Ṣohar	1,000	
Adam	750	At feud with the Al-bû-Sa'id.
Semâîl	50	
Ibrâ, el-Yehmadî	1,500	At feud with the Harth.
Rostâk. Semâîl	100	,, ,, the Beni-Ka'b and Beni-Kaṭab.
Wâdî-el-'Akk	2,000	,, ,, the Habûs.
Dhank. El-Kâbil	1,500	,, ,, the Beni-Yâs. Kaḥtânite.
Bereymî As'arah. Hafît	1,500	
Bûsher. Semâîl	100	Kaḥtânite. This family furnished Princes of 'Omân from 13th to 15th century.
Zikki or Izki	1,250	At feud with the Yemen and Beni-Rû-âheh.
El-Heiyâl	1,000	At feud with the Howâsineh and Maḳâbil.
Wâdî-el-Howâsineh	1,000	
El-Gheyzein. Ghadhfân. El-Asrar.	1,000	
El-Fazekh	1,000	
El-Wâfî	200	At feud with the Beni-bû-Hasan.
Wâdî-ba'd. Kaḥzah	2,000	,, ,, Habûs.
Jebel-el-Akhdhar	2,000	,, ,, Beni-Rû-âheh.
Dût'	100	,, ,, Beni-Ghâfir.
Seifan. El-Bâsîyeh	700	,, ,, 'Ibri-în.
El-Ghabbî. Khadal	400	
Wâdî-Hâm	200	
Naf'ah	1,500	At feud with the Hadâdebeh, Beni 'Arâbeh, and Beni Battâsh.
Ṣûr	500	
Abyadh	300	
'Obrî	1,000	Kahtânite. At feud with Beni-Ghâfir.
Rostâk. Nakhl	100	This family furnished Imâms of 'Omân in 17th and 18th centuries.
Fadâ	100	At feud with Beni-Ghâfir.

Key to Pronunciation and Transliteration.

Form.	Sound.	Arabic.	Form.	Sound.	Arabic.
A	a in beggar...	Short vowels.	TH	th in both.....	ث
E	e in bed		TH	th in the	ذ
I	i in bid		KH	ch in loch.....	خ
O	o in obey ...		GH	g in Sagen (German)	غ
U	u in bull.....		DH	d hard	ظ—ض
A	a in father ...	Long do.	H	strong h	ح
Î	ee in deed ...		S	s sibilant	ص
Ô	o in note.....		T	t hard	ط
Û	oo in boot ...		K	k do.	ق
EI	y in by	Diphthongs.	Y	y in yes	ى
EY	ey in they ...		ʿ	not describable	ع
OW	ow in cow.....		ʼ	ellipse of vowel	

Notes.

Hinâwî in general indicates the Kahtanite tribes, descendants of Yemen Arabs.

Ghâfirî „ „ Ishmaelite „ „ Nejd „

Some exceptions are noted in columns of Remarks.

Sub-tribes are not specified. Persian and Beluch tribes are omitted.

The following Geographical Divisions are termed Provinces:—1, Esh-sharkîyeh (the East), including Jaʿlân. 2, ʿOmân. 3, Edh-Dhâhireh. 4, El-Bâṭineh. 5, El-Jow, containing Bereymî. 6, El-Ḥajar or El-Hujur, the hilly districts between Bâṭineh and Dhâhireh, including the Wâdîs or passes.

The tribes of Shemâl districts, bordering the Persian Gulf, are not in this table.

The form Beni, vulg. for Benu, is adopted, as being in universal use in ʿOmân.

The Table is compiled from information of Native Arabs.

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